Cognitive Abilities Test™ **FORM 7**

Score Interpretation Guide

CogAT® FORM 7 Score Interpretation Guide

CogAT®

Cognitive Abilities Test™

David F. Lohman

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Part 1 Introduction

About This Guide

Purpose

This *Score Interpretation Guide* helps teachers, counselors, and school administrators interpret and use results of the *Cognitive Abilities Test*™ (*CogAT*®) Form 7.

How to Use This Guide

We suggest that you approach this guide in the following manner:

1. Read "Part 2: Getting Started" to:
   - confirm your purpose(s) for using *CogAT*
   - establish the integrity of the scores you have received
2. Focus on the parts of this guide specific to your testing purposes:
   - "Part 3: Adapting Instruction to Students' Needs and Abilities"
   - "Part 4: Measuring Cognitive Development to Help Identify Academically Talented Students"
   - "Part 5: Identifying Ability-Achievement Discrepancies" (students whose predicted levels of achievement differ markedly from their observed levels of achievement)
3. Use "Part 6: Communicating Test Results" to plan and deliver the *CogAT* results to students and parents.

Getting More Help

If you need help beyond the information provided in this guide, please make use of the following resources:

- *CogAT* information online
  www.cogat.com
- Your Riverside Insights® Assessment Consultant
- Riverside Insights Customer Service
  Email: inquiry@riversideinsights.com
  Phone: 1-800-323-9540

Part 2 Getting Started

In Brief

This part of the guide provides essential information for educators working with *CogAT* results.

- "Purpose of Testing" gives examples of appropriate and inappropriate uses of *CogAT* results.
- "Before You Begin" describes actions to take before you interpret test results.
- "What Do You Want to Do Next?" offers quick navigation to topics within this guide based on activities educators commonly perform that depend on score interpretation.

Purpose of Testing

Form 7 of *CogAT* assesses the level and pattern of cognitive development of students from kindergarten through grade 12. The test measures general and specific reasoning abilities in three domains: verbal, quantitative, and nonverbal. These abilities reflect the overall efficiency of cognitive processes and strategies that enable individuals to learn new tasks and solve problems. Because these abilities are closely related to an individual's success in school in virtually all subjects, *CogAT* results are helpful in planning effective instructional programs and adapting instruction to enhance the student's chances of success in learning.

Using the Test Results

The table below summarizes the three primary uses of *CogAT* scores and indicates the page number in this guide where details on each use begin.

Purposes for *CogAT*	Page
Guiding efforts to adapt instruction to the needs and abilities of students *CogAT* scores help teachers adapt instructional goals, methods, and materials to the individual needs of students.	11
Measuring cognitive development to help identify academically talented students *CogAT* captures important information not represented in report card grades or in other measures of school achievement. *CogAT* results provide valuable information that aids the identification of academically talented students.	39
Identifying students whose predicted levels of achievement differ markedly from observed levels of achievement When academic achievement is markedly above or below that expected from a student's *CogAT* scores, determining the cause helps guide instructional decisions.	51

Avoid Misuse of Test Results

Be aware of the potential misuses of *CogAT* results listed below and plan to avoid them.

- *Making instructional or placement decisions for a student based on* CogAT *scores alone* – Instead, use many different kinds of information from a variety of sources when making major instructional and placement decisions about students.
- *Assigning students to classroom groups based on similar* CogAT *scores* – The topic "When Grouping, Aim for Diversity" on page 17 explains why this practice should generally be avoided.
- *Deciding which academic skills to teach a particular student based on* CogAT *scores* – *CogAT* results *can* help inform how to teach students with different learning styles so they will have a higher probability of achieving appropriate performance objectives, but decisions on exactly which concepts and skills to teach should be based on the objectives of the local curriculum.
- *Making long-range predictions based on* CogAT *results* – *CogAT* scores have positive and significant correlations with educational achievement and the level of education completed, so predictions over one to two years can be fairly accurate for scores that are not at the extremes of the score range. However, it is **not** appropriate to make predictions about the level of achievement a student is likely to attain several years later, especially from scores obtained in the primary grades.

Before You Begin

Once *CogAT* score reports are available, complete the preparatory actions described below before using the reported data.

Important You need a working knowledge of *CogAT* reports and the types of scores reported in order to establish the integrity of your score information, interpret the scores, and use the test results.

Familiarize Yourself with *CogAT* Reports, Score Types, and Norms

If you are working with *CogAT* results for the first time or need a refresher on *CogAT* score types or reporting, refer to the following resources in this guide:

- "Appendix A: Reading Score Reports" begins on page 67.
- "Appendix B: Understanding Scores and Norms" begins on page 105.

Establish the Integrity of Your Score Information

Before you make decisions based on the new *CogAT* results, we recommend a preliminary review of the *List of Student Scores* to ensure the completeness and accuracy of your data. Educators who are most familiar with the students tested are best equipped to conduct this review.

The review of the *List of Student Scores* is a three-step process. Details on each step follow this overview:

- ✓ 1. Verify the list of students tested.
- ✓ 2. Check the validity of the scores being reported.
- ✓ 3. Confirm the reasonableness of the score levels.

To establish the integrity of your score information, follow these steps:

1. Verify the list of students tested.

   Review the *List of Student Scores* to confirm two things:

   – The report includes the names of all students whose answer documents were sent to Riverside Scoring Service for scoring.

   – All students have scores reported for each battery (and a composite score).

   If any student's test results are missing, then the summary information of percentile ranks of averages for the class may not be representative of the performance of the entire class. If students do not have scores reported for one or two of the batteries, they also will not have a composite score reported.

   Resolving an omission – If test results are missing, take action to resolve the situation.

If you find that…	Then take this action…
A student who took *CogAT* is not listed on the *List of Student Scores*	Determine whether the student's answer document was submitted for scoring. Contact your school's test coordinator or Riverside Insights Customer Service for assistance.
A student missed one or more batteries because of absence	Contact your school's test coordinator. Whenever possible, schedule a make-up session and administer the batteries the student missed. Answer documents can be scored locally to obtain the missing data for that student.

2. Check the validity of the scores being reported.

   Scan the *List of Student Scores* for warning indicators summarized in the table below. Find more information about each indicator on the page number shown below.

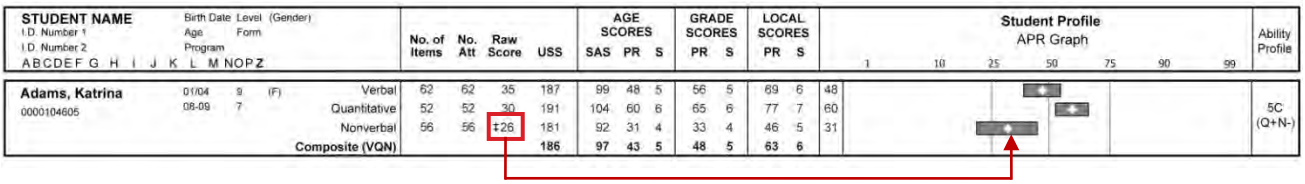
If you see…	Then it indicates…	Find more information in this guide on page…
‡	Inconsistent response pattern	6
•	Targeted (chance) score	6
^	Many items omitted, but a high score on the items attempted	7
A difference of ten or more between the **No. of Items** and the **No. Att** (attempted)	Many items omitted	7

Warning indicators alert you to scores that may be invalid because of problems with the test administration, the student responses, or the scoring. Do **not** use a score marked with a warning symbol as the basis for educational decisions without first investigating the cause of the warning. Then, if you believe the score is valid, use it. Otherwise, further action to correct the source of the error may be warranted.

(‡) Inconsistent Response Pattern

If you see…	Then it indicates…	And it means that…
A raw score for a student preceded by the symbol ‡ or the plot of the student's scores on the *List of Student Scores* with an extremely wide confidence band around the score for this battery	The student responded inconsistently to items or subtests. For example, a student may have responded incorrectly to many easy items but responded correctly to many difficult items. More commonly, a student may have scored quite differently on the three subtests that compose a battery.	There is substantial uncertainty about the level of the student's performance on this battery. Do not make educational decisions about the student on the basis of such a score or on the composite score, which is based in part on this score.

The score report excerpt below shows how an inconsistent response pattern is flagged on a score report. Because of this response pattern, the confidence band for the student's nonverbal score is very wide, indicating uncertainty about the student's actual level of performance on this battery.



(•) Targeted (Chance) Scores

If you see…	Then it indicates…	And it means that…
One or more of a student's raw scores preceded by a small bullet (•)	The targeted scores are very low raw scores that the student could have received by guessing or by randomly marking the answer document.	You should not base instructional decisions on this score. Identify any targeted scores on the *List of Student Scores* with a highlighter.
Many students' raw scores preceded by a small bullet (•)	A possible error in test administration, coding, or scoring. There should be relatively few targeted scores in a class.	An investigation into the cause is warranted; refer to "Investigating targeted scores" below.

Investigating targeted scores – If a large number of students have targeted scores, conduct the following checks:

- When the test was administered, did students use test booklets and answer documents for the same form of *CogAT*?
- Did the level of the test booklets match the level coded on the answer documents?

A "No" response is uncommon, but an irregularity in test administration and scoring occasionally occurs. In that case, the reported scores are invalid and should not be used.

Confer with your test coordinator. If it is likely that the test booklets were a different form or a different level from the answer documents, contact Riverside Insights Customer Experience. Your customer service representative will be able to tell you whether the answer documents at Riverside Scoring Service match the test booklets you have.

If the number of students with targeted scores seems correct, look at their names. Ask yourself these questions:

- Does it seem reasonable that each of these students obtained a targeted score?
- Was there anything about the physical health or emotional state of any of these individuals that might explain the poor performance?

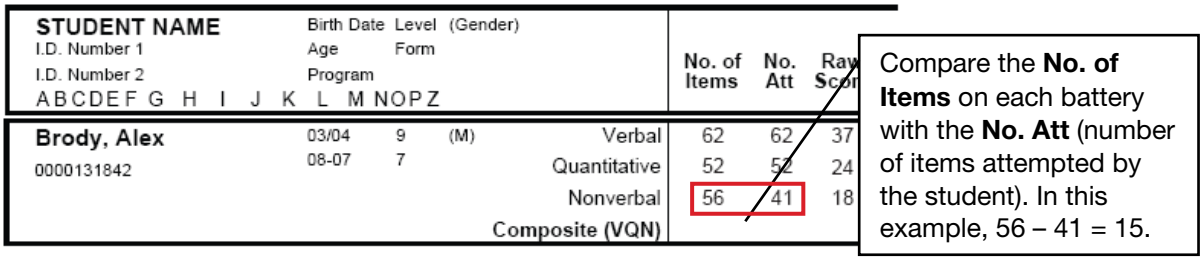
Answers to these questions may provide a logical reason for rejecting a targeted score.

(^) Many Items Omitted

If you see…	Then it indicates…	And it means that…
The "Many Items Omitted" warning symbol (**^**)	The student omitted ten or more items but correctly answered 80 percent or more of the items attempted.	The student apparently adopted an extremely slow but accurate response style. Scores for such students should be considered minimum estimates of their cognitive development.

Difference of Ten or More between the No. of Items and the No. Att (No ^)

This report excerpt shows how to determine whether there is a difference of ten or more between the number of items on the test and the number of items the student answered.



If you see a difference of ten or more…	Then it indicates…	And it means that…
For a single student	The student did not answer ten or more items in that battery.	The scores may be a reasonable estimate of the student's cognitive abilities or the scores may be invalid because of a variety of reasons. Refer to the first row of the table ("Differ greatly…") on page 9 for possible reasons for this result.
For all students on a battery and no scores are reported for that battery	It is likely that one or more subtests were not administered for that battery.	Composite scores could not be calculated for the students. The failure to administer one or more subtests can be detected by comparing the number of items omitted by the majority of the students with the number of items on each subtest in the battery. Confer with your test coordinator to determine which steps to take.

Continued on next page…

If you see a difference of ten or more…	Then it indicates…	And it means that…
For all students in a class on a battery in Level 5/6, 7, or 8	There is a likelihood of some irregularity in the administration of the test.	If you conclude that an irregularity in test administration occurred, do not use the scores on that battery or the composite score. Confer with your test coordinator to determine which steps to take.
For all/many students in a class on a battery in Level 9 or higher	There is a likelihood a timing error occurred. Because Levels 9–17/18 have time limits for each subtest, a timing error of 1–2 minutes can make a large difference in the number of questions that students answer.	If you determine a test administration irregularity occurred, the test scores are invalid. Do not interpret or use them. Confer with your test coordinator and request an investigation of the records for administering the test.

For a summary of all the symbols used in *CogAT* score reports and more information on interpreting flagged data, refer to "Report Legends: Score Warnings and Score Types" on page 70.

3. Confirm the reasonableness of the score levels.

   If you work with the same students every day, you probably make intuitive estimates of the levels of the students' abilities. You can check the reasonableness of the reported scores by comparing them with your own intuitive estimates.

   This quick check of test results can alert you to potential score reporting issues before you conduct a more thorough review of the test results.

   To check the reasonableness of the reported scores for a class, follow these steps:

   a. Review the following ability estimates and their associated composite standard age score (SAS) ranges and composite age stanines:

Your Ability Estimate	Composite SAS Range	Composite Age Stanine
Well above average	120 or higher	8–9
Average	89–111	4–6
Far below average	80 or lower	1–2

   b. For each ability category, think of one or two students who, in your estimation, fit that description. Performance and even personality differences distinguish students who are well above average and those far below average. (Gaps in the SAS ranges allow for the "gray areas" around average performance.) Then check their test results to determine whether their reported scores fall in the range you expected.

   c. From the *List of Student Scores*, identify the student who has the highest composite SAS and the one who has the lowest. There should be a reasonable correspondence between the test scores reported for those students and your intuitive estimates.

When a Teacher's Estimates and Reported Scores Differ

A teacher's estimates reflect how well students **use** their cognitive abilities, whereas valid test scores describe the kinds and levels of cognitive abilities the students actually have. When a teacher's estimates and test scores differ, both can still be correct. The discrepancy between students' levels of cognitive abilities and their effectiveness in using them is an important one to note when interpreting and using the test scores and when planning instruction.

Large discrepancies warrant further investigation. The table below provides some suggestions.

Investigating Differences between Teacher Estimates and Reported Scores

If your estimate and a student's score…	Then…
Differ greatly and the reported score is much lower than expected	Investigate the discrepancy by following these steps: 1. Check the accuracy of the age reported for the student on the *List of Student Scores.* If it is incorrect, enter the correct birth date, use the appropriate tables in the *CogAT Form 7 Norms and Score Conversions Guide* to obtain a new age score, and check again for agreement. If the score still differs greatly from your intuitive ranking, continue with step 2. 2. Look at the width of the confidence bands for that student's scores on the *List of Student Scores.* An unusually wide band signals confusion on the student's part in following directions or recording answers. 3. Compare the **No. of Items** with the **No. Att** for each battery. If there is a difference of ten or more between the number of items and the number of items attempted, try to isolate the cause using the table that begins on the bottom of page 7. 4. If the student marked answers to all, or almost all, of the items on each battery, consult your notes on the test session. Was the student physically ill before, during, or soon after the testing dates? Could he or she have been undergoing some personal problem at the time the test was administered? Poor physical or emotional health at the time of testing can adversely affect a student's test performance. These factors should always be considered in making decisions about the interpretation and use of test scores for a student.
Differ greatly and the reported score is much higher than expected	Check the accuracy of the age reported for the student on the *List of Student Scores.* If it is incorrect, enter the correct birth date, use the appropriate tables in the *CogAT Form 7 Norms and Score Conversions Guide* to obtain a new age score, and check again for agreement.

Continued on next page…

If your estimate and a student's score…	Then…
Differ greatly and the reported score is much higher than expected, *continued*	If the score still differs greatly from your intuitive estimate, this discrepancy may have a logical explanation. Learning in school is influenced in part by an individual's level of general cognitive abilities. Many other factors also affect achievement in school, such as the willingness to invest the effort and time required for learning; attitudes toward school, particular subject-matter areas, or authority; personal and social adjustment; and the amount and quality of support at home. Perceptive teachers sometimes identify "underachieving" students from informal interactions with them, but such students are not always identified. One of the purposes of administering *CogAT* is to identify these students so that appropriate interventions can be made to help them. (This purpose for testing is the subject of Part 5 of this guide, which begins on page 51.)

If you need assistance with a potential scoring issue, contact Riverside Insights Customer Experience.

What Do You Want to Do Next?

Upon completion of the preparatory actions described above, you are ready to start working with your *CogAT* test results. The table below serves as a navigational guide to a number of activities that you can perform after receiving *CogAT* score reports. This is *not* an exhaustive list. Consider it a starting point for matching your needs to topics in this guide.

Navigating This Guide

If you want to…	Then refer to this topic…	Page
Use *CogAT* results to guide efforts to adapt instruction	Part 3: Adapting Instruction to Students' Needs and Abilities	11
Use *CogAT* results as one information source when identifying academically talented students	Part 4: Measuring Cognitive Development to Help Identify Academically Talented Students	39
Use *CogAT* results to identify students with significant ability-achievement differences that may have otherwise gone unnoticed	Part 5: Identifying Ability-Achievement Discrepancies	51
Report and explain test results to students and parents	Part 6: Communicating Test Results	59
Identify the contents of *CogAT* score reports; interpret scores	Appendix A: Reading Score Reports	67
Understand the meaning of each *CogAT* score type and norm	Appendix B: Understanding Scores and Norms	105

If you have a specific subject in mind, try using the Index, which begins on page 117, to pinpoint information you need.

Part 3 Adapting Instruction to Students' Needs and Abilities

In Brief

A primary use of *CogAT* is to guide efforts to adapt instruction according to students' needs and abilities. The key to adapting instruction is the ability profile, an indicator that is derived from the level and pattern of each student's *CogAT* scores.

This part of the guide focuses on what you need to know and do to adapt instruction using *CogAT* ability profiles. It explains:

- things to do before you interpret and act on test results
- the meaning and components of the ability profile
- general principles about adapting instruction
- instructional suggestions based on both the overall level of ability and the particular pattern of strengths and weaknesses students display

Before You Begin

Before you act on the information in this part of the guide, we recommend you complete two actions:

- Establish the integrity of the *CogAT* scores (see page 4).
- Learn to locate stanines and the ability profile for each student on the *CogAT* report(s) you have (refer to "Appendix A: Reading Score Reports," beginning on page 67).

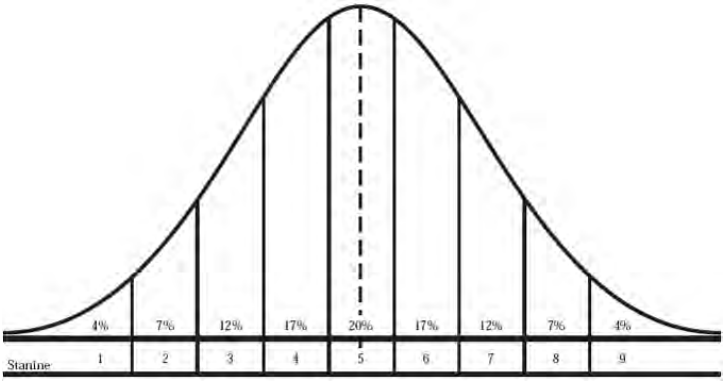
Understanding Ability Profiles

A *CogAT* composite score provides the average of a student's scores on the three *CogAT* batteries. However, the ability profile is a far more informative and useful index. The ability profile captures two characteristics of the student's scores:

- level – the overall magnitude of the scores
- pattern – whether some scores are significantly higher or lower than other scores

Score Levels

A **stanine** indicates one of nine broad score groupings on a normalized standard score scale. Stanines range from 1 (lowest) to 9 (highest).



Each *CogAT* ability profile begins with a number that represents the student's **median age stanine.** For example, if the student has age stanines of 6, 3, and 8 on the Verbal, Quantitative, and Nonverbal batteries, respectively, the student's median age stanine is 6 (the middle of the student's three age stanines after ranking from low to high).

In a student's ability profile, the median age stanine indicates a level of reasoning ability. It is often useful to describe a student's *CogAT* results in terms of one of the reasoning ability levels shown in the table below rather than in terms of the stanine number.

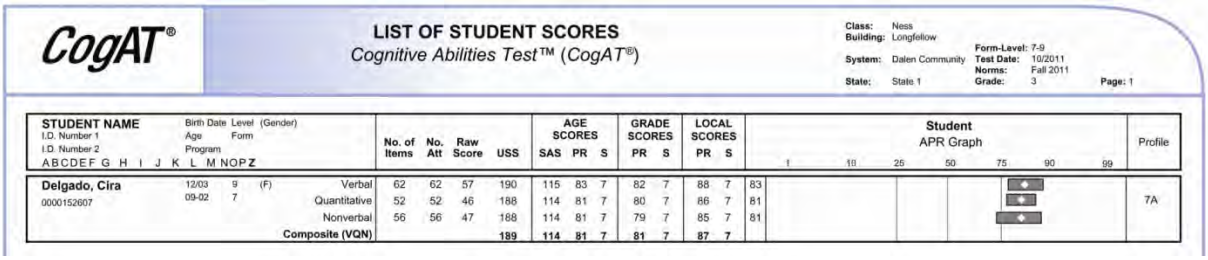
Median Age Stanine	Reasoning Ability Level
9	Very high
7–8	Above average
4–6	Average
2–3	Below average
1	Very low

Score Patterns

The graph of a student's score for each *CogAT* battery includes an estimate of the margin of error, displayed on the score report as a confidence band (shaded rectangle) around the age percentile rank (APR) score for each of the three batteries. These margins of error vary by battery and student.

Based on the relative position of these confidence bands, ability profiles are classified as **A**, **B**, **C**, or **E** profiles. The *List of Student Scores* excerpts that follow on the next page show examples of these profiles and their confidence bands.

In an **A** profile, all three confidence bands overlap, meaning the student's Verbal, Quantitative, and Nonverbal Battery scores are roughly at the s**A**me level. About 50 percent of students who take the Levels 5/6–8 tests have this profile; about 40 percent of students who take the Levels 9–17/18 tests have this profile.



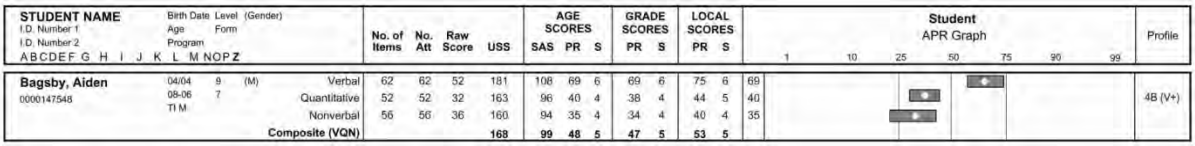
CogAT®

LIST OF STUDENT SCORES
Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 1

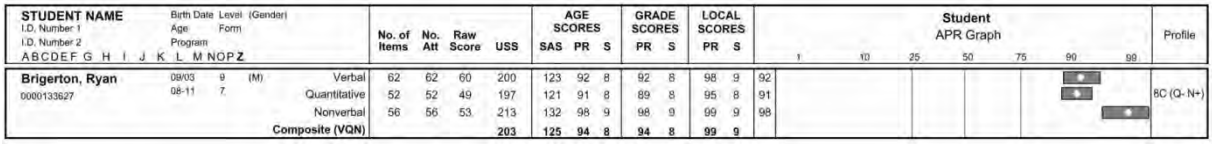
STUDENT NAME / I.D. Number 1 / I.D. Number 2 / A B C D E F G H I J K L M N O P Z	Birth Date / Age / Program	Level	Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph (1 10 25 50 75 90 99)	Profile
Delgado, Cira	12/03	9	7	(F)	Verbal	62	62	57	190	115	83	7	82	7	88	7	83	
0000152607	09-02				Quantitative	52	52	46	188	114	81	7	80	7	86	7	81	7A
					Nonverbal	56	56	47	188	114	81	7	79	7	85	7	81	
					Composite (VQN)				**189**	**114**	**81**	**7**	**81**	**7**	**87**	**7**		

In a **B** profile, two of the confidence bands overlap. The third score is a relative strength or weakness, significantly a**B**ove or **B**elow the other two. About 26 percent of students who take the Levels 5/6–8 tests have this profile; about 36 percent of students who take the Levels 9–17/18 tests have this profile.



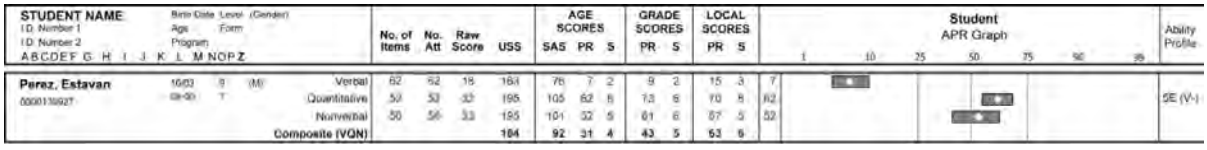
STUDENT NAME / I.D. Number 1 / I.D. Number 2 / A B C D E F G H I J K L M N O P Z	Birth Date / Age / Program	Level	Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph (1 10 25 50 75 90 99)	Profile
Bagsby, Aiden	04/04	9	7	(M)	Verbal	62	62	52	181	108	69	6	69	6	75	6	69	
0000147548	08-06				Quantitative	52	52	32	163	96	40	4	38	4	44	5	40	4B (V+)
	TI M				Nonverbal	56	56	36	160	94	35	4	34	4	40	4	35	
					Composite (VQN)				**168**	**99**	**48**	**5**	**47**	**5**	**53**	**5**		

In a **C** profile, two scores **C**ontrast. The student shows a relative strength **and** a relative weakness. About 12 percent of students at all levels have this profile.



STUDENT NAME / I.D. Number 1 / I.D. Number 2 / A B C D E F G H I J K L M N O P Z	Birth Date / Age / Program	Level	Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph (1 10 25 50 75 90 99)	Profile
Brigerton, Ryan	08/03	9	7	(M)	Verbal	62	62	60	200	123	92	8	92	8	98	9	92	
0000133627	08-11				Quantitative	52	52	49	197	121	91	8	89	8	95	8	91	8C (Q- N+)
					Nonverbal	56	56	53	213	132	98	9	98	9	99	9	98	
					Composite (VQN)				**203**	**125**	**94**	**8**	**94**	**8**	**99**	**9**		

An **E** profile indicates **E**xtreme score differences. At least two scores differ by 24 or more points on the standard age score (SAS) scale. About 9 percent of students at all levels have this profile.



STUDENT NAME / I.D. Number 1 / I.D. Number 2 / A B C D E F G H I J K L M N O P Z	Birth Date / Age / Program	Level	Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph (1 10 25 50 75 90 99)	Ability Profile
Perez, Estavan	10/03	9	7	(M)	Verbal	62	62	16	184	76	7	2	9	2	15	3	7	
0000130927	09-09				Quantitative	52	52	33	195	105	62	5	73	6	70	5	62	
					Nonverbal	56	56	33	195	101	52	5	61	6	67	5	52	5E (V-)
					Composite (VQN)				**184**	**92**	**31**	**4**	**43**	**5**	**53**	**5**		

Relative Strengths and Weaknesses

An ability profile also indicates any relative strengths and/or weaknesses evident in the student's battery scores.

+	V, Q, or N followed by a plus sign (+) indicates a relative strength on the Verbal, Quantitative, or Nonverbal Battery, respectively.
–	V, Q, or N followed by a minus sign (–) indicates a relative weakness on the Verbal, Quantitative, or Nonverbal Battery, respectively.

For example, an ability profile of **4B (V+)** means that the student's median age stanine is 4 and that the student's score on the Verbal Battery was significantly higher than the student's scores on the two other batteries.

Ability Profile Examples

A variety of ability profiles are explained in the examples below.

9A	Very high scores on all three batteries
8B (Q–)	Generally high scores but a relative weakness on the Quantitative Battery
2B (N+)	Generally below-average scores but a relative strength on the Nonverbal Battery
5C (V+ N–)	Generally average scores but a relative strength on the Verbal Battery and a relative weakness on the Nonverbal Battery
8E (V–)	Generally high scores but an extreme relative weakness on the Verbal Battery

In general, the number (the median age stanine) carries the most information in the interpretation of **A** profiles, less for **B** profiles (now we must also consider the strength or weakness), still less for **C** profiles (because we must consider a strength *and* a weakness), and the *least* for **E** profiles.

You can access the Interactive Ability Profile Interpretation System, an online tool to interpret ability profiles of your choosing, at this website:
https://www.riversideinsights.com/apps/cogat

Adapting Instruction – Principles

Success in school depends on many personal and social factors, but two of these factors matter the most:

- the student's current knowledge and skills
- the student's reasoning abilities using verbal, quantitative, and spatial concepts

CogAT measures reasoning abilities in all three domains—verbal, quantitative, and nonverbal—which is why it is so helpful in guiding efforts to adapt instruction and improve learning outcomes. This section summarizes the following research-based principles that guide instructional adaptation:

- build on strength
- focus on working memory
- scaffold wisely
- encourage strategic thinking
- when grouping, aim for diversity

The remainder of this part of the guide offers suggestions based on these principles and specific to a student's *CogAT* ability profile.

Build on Strength

When a student is weak in one area but strong in another, a general rule is to build on the strength. Students are better able to process information when tasks emphasize the type of thinking they do best.

When adapting instruction to build on strengths, follow these guidelines:

- Instruction geared to a strength should **challenge** that strength. It should encourage students to go beyond the information given, not merely register it.
- Frequently, students must learn to perform tasks that they do not do well. In such cases, emphasize aspects of the tasks that avoid their weakness until the students have established a foothold.

For example, consider students who have difficulty learning computation skills but who show strength in verbal reasoning. Using group oral recitation and encouraging students to talk through math problems will emphasize their verbal strength more than silent practice on computation.

Focus on Working Memory

When students are required to remember and do more things than they are capable of remembering and doing at one time, they generally fail. In cognitive terms, their **working memory** is overloaded.

As they learn, students must understand, temporarily store, and then transform new information in some way. All three of these processes require working memory, which is a limited resource.

Effective use of working memory is critical for successful reasoning. Students cannot make inferences about how two or more ideas are connected if they cannot hold the ideas in their working memory while trying to compare them.

Indicators that a student's working memory is overloaded include the following:

- inability to recall and complete a list of oral instructions
- skipping or repeating parts of a task
- task abandonment and frustration

Working memory has a limited capacity. When helping students who are unfamiliar with a task or who have difficulty learning, aim to reduce the burden on working memory while maintaining the integrity of the lesson content.

Two important questions for educators to ask are:

- "What are the major demands that this activity places on the students' working memories?"
- "Which of these memory requirements can be offloaded or **scaffolded**?"

Scaffold Wisely

Whenever students try to solve problems, many processes must be executed simultaneously in working memory. **Scaffolding wisely** means offloading, at least for the moment, those memory requirements and processes that are not the object of the instructional activity.

For example, the demands of spelling and grammar can easily overwhelm the working memory resources of a beginning writer. Temporarily offloading these demands frees the student to write a connected narrative.

Similarly, one of the last steps in the acquisition of skills is learning to monitor one's own performance. Especially in the early stages of skill acquisition, monitoring functions can be offloaded to another individual by having students work in pairs. Using checklists, writing things down, drawing pictures, and practicing a skill until it can be performed automatically also reduce demands on working memory.

When working with students who have difficulty making inferences, deductions, and elaborations, avoid the temptation to make things easy by offloading the **reasoning** requirements of the tasks. This strategy works well in the short run but leaves students increasingly unprepared to face future challenges of school learning. When reasoning is an essential part of a task, find ways to support and guide learners without offloading their need to reason.

Encourage Strategic Thinking

Psychologists who study reasoning distinguish between two types of reasoning processes:

- *Tacit processes* occur outside awareness. They typically do not require much attention and are performed quickly and intuitively.
- *Intentional processes* require conscious awareness. Intentional thinking is often described as effortful and rule-based.

For example, skilled readers use **tacit reasoning processes** to understand much of what they read. They retrieve word meanings quickly and automatically build mental images that help them keep track of the meaning of a passage as they move from one sentence to the next. Beginning readers, on the other hand, use **intentional reasoning processes** to understand the meaning of both individual words and of the sentences that they make, often relying on illustrations rather than their own mental imagery.

Reasoning processes are most useful when students learn to use them strategically. At the lowest level, this means simply having a strategy that one can consciously use when necessary. At an intermediate level, it means having multiple strategies available for possible use. At a more advanced level, it means knowing under which circumstances each strategy is best used. And at the highest level, it means becoming strategic and reflective in one's thinking.

Instructional adaptations are most effective over the long haul if they help learners become more intentional and self-regulated in their learning. Encouraging students to use and monitor the effectiveness of different strategies helps them better leverage their strengths and avoid, or scaffold, their weaknesses.

When Grouping, Aim for Diversity

CogAT results should not be used to routinely group students by score levels or by ability profiles. Students are most likely to improve their ability in a domain if they have the benefit of learning from classmates whose skills and approaches to problems differ from their own.

Working with students of different ability levels is particularly important for students who have a marked deficit in one area. Improvement is more likely if such students have high-quality interactions with individuals who have a relative strength in the same area than if they are constantly paired with other students who, like themselves, have difficulty in that domain.

More-able students benefit from such groups to the extent that they are asked to provide explanations and assistance. Note, however, that highly academically talented students can benefit from being grouped with other high-ability students in classes that offer advanced or accelerated learning.

Adapting Instruction for Different Ability Levels

A student's *CogAT* ability profile is the key to designing effective instruction for that student. This section of the guide offers suggestions on instructional strategies based on the **median age stanine** (overall cognitive ability level) indicated by the student's ability profile.

Guidance based on **relative strengths and weaknesses** identified in the ability profile (verbal [V], quantitative [Q], and nonverbal [N] cognitive domains with a plus or minus sign) begins on page 25.

Instructional Strategies by Ability Level Groupings

For all students, begin by considering the overall ability level indicated by the ability profile. The number that begins each ability profile is the median age stanine that the student obtained on the three *CogAT* batteries. For example, if the student has stanines of 7, 3, and 6 for the Verbal, Quantitative, and Nonverbal batteries, respectively, that student's median age stanine is 6.

The tables on the following pages present information on four groups of students based on their median age stanines.

Stanine	Reasoning Ability Level
9	Very high
7–8	Above average
4–6	Average
1–3	Below average

The first table summarizes learner characteristics of students in each group; the remaining tables present suggestions for adapting instruction for students in each group, in terms of the five research-based principles explained in "Adapting Instruction – Principles" on page 14.

For students who do not have an **A** profile, refer to "Adapting Instruction to Build on Relative Strengths" on page 25 and "Adapting Instruction to Shore Up Weaknesses" on page 30 for additional guidance based on a student's particular strength or weakness.

You can obtain more information on a specific ability profile by using the Interactive Ability Profile Interpretation System. This tool is available at the following website: https://www.riversideinsights.com/apps/cogat

Learner Characteristics

Students with…	Typically exhibit the following learning characteristics:
Below-average reasoning abilities (Stanines 1–3)	• difficulty learning abstract concepts • minimal or ineffective strategies for intentional learning and remembering (Therefore, they tend to approach learning tasks in a trial-and-error fashion.) • a tendency to spend little time planning before attempting to solve a problem (As a result, they frequently do not transfer knowledge and skills learned in one context to another context unless prompted to do so.) • difficulty detecting relationships, similarities, and differences that go beyond appearances • a tendency to be easily distracted by salient but irrelevant details in problems
Average reasoning abilities (Stanines 4–6)	• frequent use of words that are correct but do not precisely describe a concept or relationship • likely to use only previously learned methods when faced with new tasks • difficulty transferring knowledge and skills when tasks look different from those previously learned
Above-average reasoning abilities (Stanines 7–8)	• ability to learn relatively quickly • good memory and effective learning strategies • typically less need to practice to master a skill compared with average students
Very high reasoning abilities (Stanine 9)	• preference for discovery learning rather than highly structured learning environments (When adapting instruction for these students, realize that good discovery learning need not be a solitary task.) • need for the company of other learners who model new ways of understanding a problem and who challenge these learners to improve their current understanding

Build on Strengths

For students with…	Guidelines for Adapting Instruction
Below-average reasoning abilities (Stanines 1–3)	Look for strengths in terms of specific interests and achievements. Even more than other students, those who are behind their peers in reasoning abilities often learn more and sustain their efforts longer if the teacher discovers and builds on their interests. It is not always possible or even desirable to bend all learning to suit a student's interests; to the extent that it can be done, it will lead to greater effort and a generally more sophisticated outcome. Identify and emphasize other competencies these students have, especially when students are working in groups. For example, these students may be able to help draw a poster that summarizes the group's discussion or take the lead role in a demonstration. Using their skills helps legitimize the students' participation in the group. Students who feel that they are participants (rather than observers) have higher levels of motivation and engagement in a task.
Average reasoning abilities (Stanines 4–6)	Although these students have good resources for learning, they often have difficulty applying what they know when learning a new task, particularly when it looks different from tasks that they have previously learned. Consider the following instructional adaptations for these students: • Recognize that their strengths will primarily be evident in their interests and, to a lesser extent, in their levels of achievement in different domains. • Find ways to encourage and acknowledge the particular academic accomplishments of these students. • Help them develop the habit of analyzing new tasks to detect relationships with previously learned tasks. Do this by modeling the process for them.
Above-average reasoning abilities (Stanines 7–8)	• Recognize that these students generally profit most when allowed to discover relationships themselves. *Guided* discovery methods work better than more structured teaching methods. • Challenge them with materials, projects, and problems that are somewhat more difficult than those used for the typical student. • Improve their reasoning skills by encouraging them to precisely describe the relationships among concepts or the rules that sequence them. For example, in writing, encourage students to find words that express ideas exactly rather than approximately. • Encourage these students to follow their interests, and reward perseverance on long-term projects.
Very high reasoning abilities (Stanine 9)	The single greatest need of very able students is for academic challenge at a level commensurate with their abilities and achievements. Consider the following instructional adaptations for these students: • Carefully select challenging instructional materials, special projects, or other enrichment activities. • Offer instruction, particularly in mathematics, at a level that may be several years in advance of that received by age-mates.

Focus on Working Memory

For students with…	Guidelines for Adapting Instruction
Below-average reasoning abilities (Stanines 1–3)	Students with poor reasoning skills can reap great benefits when you can reduce the demands on their working memory. Be aware of these limitations: • These students are easily overloaded. A lesson may start out meaningfully but soon degenerate into an anxious search for surface features of tasks that suggest a solution. • The primary burden on working memory comes from an overload of concepts, images, sounds, and words that must be held in mind. The most effective way to improve performance is to reduce the number of things that must be held simultaneously in working memory. For example, some students have difficulty relating what they hear to what they see or coordinating what is on the board with what is on the paper in front of them. Eliminating the need to remember ideas, even temporarily, can greatly assist these students. • Reduce burdens on working memory with instructional methods such as these: – Use familiar concepts and make concrete analogies to familiar physical systems. – Offload items to be remembered or processes that must be performed simultaneously. – Provide ample structured practice so that skills such as writing, typing, or calculating become automatic.
Average reasoning abilities (Stanines 4–6)	These students are frequently working at the limits of their mental-processing resources. Reducing the burden on working memory can have a significant effect on their success in learning. When possible, make modifications to instructional methods such as these: • Put all the needed information on a single sheet of paper. • Use familiar, concrete concepts rather than unfamiliar, abstract symbols. • Provide ample practice so that students master skills that assist in problem solving and comprehension. • Offload performance monitoring to another individual by having students work in pairs. Self-monitoring skills are especially troublesome for these students, particularly in the primary grades. Offloading monitoring can be especially effective early in the process of acquiring a new skill or strategy. Burdens on working memory change dramatically as these students gain proficiency with a skill. What is initially overwhelming can be, with practice, well within a student's range.
Above-average reasoning abilities (Stanines 7–8)	The following techniques optimize the use of working memory for these students: • Temporarily offload self-monitoring to another student or to the teacher. Although these students need less practice than average students to master new skills, they acquire complex skills more readily when relieved of the need to self-monitor.

Continued on next page…

Focus on Working Memory, *continued*

For students with…	Guidelines for Adapting Instruction
Above-average reasoning abilities (Stanines 7–8), *continued*	• Break highly complex tasks into a series of simpler tasks or skills. Provide focused practice on those components until the student masters the low-level skills. Then sequence and combine those skills, building up to the complex task. • Teach students how to monitor their own thinking and problem solving by recording their thoughts on paper. Show them how studying the written record allows them to focus, reflect, revise, and clarify their thinking.
Very high reasoning abilities (Stanine 9)	When helping these students acquire new academic skills, consider these adaptations: • Encourage mindful and self-regulated learning, even for students in early primary grades. • Let them try different skill-acquisition strategies and monitor the effectiveness of each.

Scaffold Wisely

For students with…	Guidelines for Adapting Instruction
Below-average reasoning abilities (Stanines 1–3)	Students with **above**-average reasoning abilities know what to attend to and what to ignore when trying to understand a problem, but students with poorly developed reasoning abilities often have difficulty identifying what is important to learn and judging where they should focus their attention in a learning situation. Be aware of these limitations: • These students need very specific directions before they start a task or start to study. Attention-getting directions can help students focus on important aspects of a task, particularly in reading. • They learn more effectively in structured learning environments that make fewer demands on their cognitive resources and provide more direct guidance, coaching, and support. • They tend to process information slowly and need a slower pace of instruction than do students with higher stanine scores. For these students, "doing" works better than talking about it. • Instructional strategies likely to be more effective than verbal explanations include: – teacher- or peer-modeling – concrete representations of abstract concepts – demonstrations and hands-on activities – pictures or other types of illustrations, videos, and three-dimensional models

Continued on next page…

Scaffold Wisely, *continued*

For students with…	Guidelines for Adapting Instruction
Below-average reasoning abilities (Stanines 1–3), *continued*	When designing instruction for these students, beware of the tradeoff between short-term gains and long-term competence. Highly structured environments that remove the information-processing burden from these learners usually result in higher immediate achievement but can leave these students even less prepared to cope with future learning challenges. Instead, adapt instruction to scaffold lower-order processes and memory burdens in order to encourage the development of reasoning abilities for these students.
Average reasoning abilities (Stanines 4–6)	Students with average reasoning abilities tend to learn most effectively in the following conditions: • school environments that are somewhat, but not highly, structured • instruction that is moderately paced and provides frequent monitoring and feedback on their progress The goal of good instruction is to provide students with enough support in the form of strategies, memory prompts, and task structure so they can infer, deduce, connect, and elaborate (in short, so they can understand and think for themselves).
Above-average reasoning abilities (Stanines 7–8)	These students typically have effective learning strategies in place and are generally good at recognizing when they need help in order to accomplish a task. They can benefit from: • instruction that helps them plan the use of different strategies in different contexts • working with more-able peers, particularly on difficult problems or learning tasks • guidance on using more effective strategies or implementing strategies correctly
Very high reasoning abilities (Stanine 9)	Very able students need access to instruction that allows and encourages them to develop their academic skills. Some also need help coping with negative feelings, such as anxiety. Learning to persist in the face of difficulty can also be an important affective or motivational issue for very able students. Working with an older and more experienced student (or adult) can be especially beneficial.

Encourage Strategic Thinking

For students with…	Guidelines for Adapting Instruction
Below-average reasoning abilities (Stanines 1–3)	Because these students often have considerable difficulty identifying appropriate situations in which to use a particular strategy, follow these guidelines for teaching them learning strategies: • Use modeling and demonstration during ongoing learning situations in the classroom. • Enlist more-able peers to provide the guidance these students need to focus on relevant aspects of a task, to keep track of what they are doing, and to avoid practicing errors. • To help students become more reflective in their learning, focus on a few good strategies rather than on a detailed list of rules. • Once students have learned how to apply a strategy in a particular context, provide opportunities for them to apply it in other contexts. • During the early phases of skill acquisition, carefully monitor students who have difficulty monitoring themselves and who are susceptible to making errors to ensure that they understand the procedure or strategy and are applying it correctly.
Average reasoning abilities (Stanines 4–6)	When these students learn to be more strategic in their thinking, memory burdens are reduced and thinking leads to better results. Common challenges encountered and instructional methods to help students overcome them include the following: • Frequent errors in implementing learning strategies – Provide frequent monitoring when the students are learning a new strategy so that any errors can be corrected early and not practiced. – Model correct implementation of a strategy rather than describing it. • Lack of effective study skills – Provide direct instruction in study skills such as note taking, outlining, diagramming, and planning use of time. – Formulate questions to guide their study. • Inability to solve complex problems – Show students how to break up complex problems into simpler units. – Provide tools and methods for tracking their progress in solving complex problems. – Help students become mindful of their own strengths and weaknesses and of the effectiveness of different strategies in different contexts.
Above-average reasoning abilities (Stanines 7–8)	Able students are quick to acquire different learning strategies. The following approaches are suggested for these students: • Expose them to alternative strategies, especially if modeled by respected adolescents and adults. Help students appreciate the value of different strategies for different purposes and problems. • Encourage students to try each modeled strategy and help them keep track of the results. As students progress beyond middle school, encourage them to expect changes in strategies that work best for learning.

Continued on next page…

Encourage Strategic Thinking, *continued*

For students with…	Guidelines for Adapting Instruction
Very high reasoning abilities (Stanine 9)	Very able students are generally receptive to activities that allow them to discover how they can best use their cognitive resources. **For students in the early primary grades,** this can mean learning not only that there are different ways to attain competence in performing a skill, memorizing poetry, or solving problems, but also that learners have the option of discovering which methods work best for them. **For older students,** the emphasis should be on developing a willingness to expand their reasoning abilities in these ways: • Reflect on existing knowledge to compare, contrast, and internalize new information. • Shift perspectives and consider alternative opinions and evidence. • Entertain increasingly sophisticated theories of what counts as knowledge and evidence.

When Grouping, Aim for Diversity

For students with…	Guidelines for Adapting Instruction
Below-average reasoning abilities (Stanines 1–3)	These students should not be segregated in classes or groups consisting solely of other low-scoring students. Those who have difficulty reasoning when alone typically learn more effectively and have higher levels of achievement when they have many opportunities to interact with more-able peers. Students who have not yet learned how to participate fully in an activity can learn much by observing and doing what they can.
Average reasoning abilities (Stanines 4–6)	Many cognitive skills are learned first by observing other students interacting and then by gradually learning to participate in the same sort of exchanges. Plan group activities with these guidelines in mind: • Try to structure group interactions so that all students have an equal opportunity to participate. (Research shows that students with average abilities are often left out of group problem-solving efforts.) • Structure groups so that more-able students model higher-order skills (via student conversations) before group members practice the skills. Only after much overt practice can a skill be internalized and then executed covertly (that is, cognitively).
Above-average reasoning abilities (Stanines 7–8)	Above-average students are generally excellent group participants, especially if the group is structured so that no one can dominate the discussion or be left out of it. These students can learn well in groups by explaining, by helping to summarize discussions, and by modeling higher-order thinking skills for other students.

Continued on next page…

When Grouping, Aim for Diversity, *continued*

For students with…	Guidelines for Adapting Instruction
Very high reasoning abilities (Stanine 9)	Very able students can benefit from group interactions when they are able to explain difficult concepts to other students, but they learn more when they are able to participate as learners as well. When grouping very able students with other students, try to devise groups that provide them with the following experiences: • They will be learners, not just explainers. • They will be challenged by a diversity of perspectives among participants.

Adapting Instruction to Build on Relative Strengths

Approximately half of the students who take *CogAT* show a relative strength or a relative weakness in one of the three test batteries. Understanding this provides the opportunity to adapt instruction to build on the student's strengths and shore up any weakness.

Ability profiles with a **V+**, **Q+**, or **N+** indicate a **relative strength** on the Verbal, Quantitative, or Nonverbal Battery, respectively.

Profiles that show a relative strength are more common for low scores (median age stanines of 1, 2, or 3) than for high scores (median age stanines of 7, 8, or 9).

Profiles are especially important for understanding the abilities of the least-able students. Profiles that show an extreme strength (**E+**) are most common for students with a median stanine of 1. In fact, for students with a median age stanine of 1, profiles that show a significant or extreme strength are almost as common as profiles that show a relatively flat (**A**) profile. Both occur for about 45 percent of students nationally. The information that follows offers suggestions on adapting instruction to build on a relative strength indicated by a student's *CogAT* ability profile.

Relative Strength	Cognitive Domain	Page
V+	Verbal	26
Q+	Quantitative	27
N+	Nonverbal	28

Ability profiles with a **V–**, **Q–**, or **N–** indicate a **relative weakness** on one of the three *CogAT* batteries. Guidance on shoring up weaknesses begins on page 30.

Relative Strength in Verbal Reasoning (V+)

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics	These students typically obtain higher-than-expected achievement test scores in all areas except mathematical computation. The differences between observed and expected achievement are smallest at the primary level and largest at the secondary level. A strength in verbal reasoning has this broad effect on achievement because verbal reasoning abilities are important for success in virtually all school subjects.
Relative Strength	Indicators of a relative strength in verbal reasoning include the following: • The students generally do best when they are encouraged to talk and write about what they are attempting to learn. • These students often have remarkably good memories for arbitrary sequences of sounds, letters, words, and events. Thus, they typically are above average in spelling; in their knowledge of syntax and grammar; in their ability to learn other languages; and in their ability to remember dialogue, prose, and poetry.
Building on Strength	Instructional opportunities to build on students' strength in verbal reasoning include the following: • Offer greater challenges in areas of the curriculum that involve reading, writing, and speaking. At the elementary level, this may mean providing special reading or writing assignments that are more demanding than the assignments given to other students. At the secondary level, if scores on the Verbal Battery are particularly high (stanine 8 or 9), it may mean placement in honors or advanced-placement classes. • Encourage these students to use their superior verbal reasoning skills to achieve at higher levels in other curricular areas, particularly in mathematics. For example, these students will often learn best if encouraged to restate mathematical expressions verbally and to explain them to others. • Avoid this pitfall in mathematics: Students with relatively strong verbal abilities often find it easier to memorize formulas than to build more abstract, often spatial mental models of the same conceptual systems. It is the latter that leads to long-term retention of mathematical concepts and, more importantly, to the ability to transfer mathematical knowledge to unfamiliar domains. Take steps to discourage these students from simply memorizing formulas. The use of computers with graphing capabilities can help in this respect. Most importantly, use learning materials and test problems that allow these students to use their excellent verbal reasoning skills instead of their rote memories when learning mathematics. • Especially at the primary and early elementary levels, encourage these students to practice mathematical facts orally rather than silently. Consider how one best learns common replies to questions posed in a foreign language and try using similar methods here. Expect that these students will need more practice for mastering mathematical skills than they need for mastering reading and language skills.

Continued on next page…

Relative Strength in Verbal Reasoning (V+), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Building on Strength, *continued*	• Encourage the habit of creating a mental model and coordinating it with a verbal description. These students sometimes have difficulty creating a visual mental model of the scenes depicted in a story. Read aloud to such students, pausing frequently to respond to their questions or to ask what they envision. Select texts with illustrations and ask students to make explicit connections between the text and the illustration. • For young students or for those who still have difficulties understanding stories, allow them to make a model of the situation described in the story and then to alter the model as changes occur in the text. Their goal is to learn how to create a visual mental model that allows them to keep track of the persons and events described in the text. If students are able to read and write about events that occur in locations that they know well, illustrations may not be needed.

Relative Strength in Quantitative Reasoning (Q+)

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics	Students in the primary grades who show a strength in quantitative reasoning tend to score somewhat higher than expected (on the basis of their verbal and nonverbal reasoning abilities) on both the mathematics and language portions of standardized achievement tests. By the elementary years, however, the advantage is confined to mathematics and persists through the high school years.
Relative Strength	Indicators of a relative strength in quantitative reasoning include the following: • Students are capable of abstract thinking. At lower ability levels, a quantitative strength may be apparent in the student's abilities with the computational aspects of mathematics rather than the conceptual aspects. • Students who display high levels of quantitative reasoning abilities typically excel in identifying patterns from their experiences and then reasoning by using their abstractions. • They often learn computer skills more readily than their peers, especially skills such as procedures for using text editors and spreadsheets. They do not typically excel at computer programming unless their quantitative reasoning abilities are quite high. • Students who excel at learning rule-based mathematical knowledge often show better-than-expected knowledge of grammar.
Building on Strength	Instructional opportunities to build on a strength in quantitative reasoning include the following: • Exploit and further develop this ability. If quantitative reasoning scores are very high, this may mean acceleration for some students; others benefit from enrichment activities such as math clubs or honors classes. Selecting appropriate strategies requires knowledge of a student's level of achievement in mathematics and of personal factors such as anxiety about working with older students.

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Relative Strength in Quantitative Reasoning (Q+), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Building on Strength, *continued*	• Provide opportunities for these students to contribute at high levels to group projects. A strength—especially an extreme strength—in quantitative reasoning can be a source of great pride. Group projects provide an avenue for building better verbal and spatial reasoning abilities. • If students have strong grammar skills, praise this strength and ask the students to give feedback on each other's writing. This activity, in turn, can help these students acquire knowledge of higher-level writing skills (such as principles of style or organization). • Encourage development of their abilities through mathematical tasks, games, and puzzles that can be engaged in cooperatively rather than competitively.

Relative Strength in Nonverbal Reasoning (N+)

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics	Students who show a relative strength on the Nonverbal Battery can be either very good at reasoning with spatial stimuli or particularly adept at solving novel problems that are unlike those encountered in school. Choosing between these explanations often requires information outside the test results (for example, knowledge of a student's learning style and extracurricular activities of choice and, for older students, their career interests). Students with particularly strong spatial abilities often experience difficulties in verbal fluency (as when writing under time pressure or speaking extemporaneously) or in remembering sequences of words or letters (as in spelling). On the other hand, these students often excel at drawing, sculpting, and other visual and mechanical arts. Another possibility is that this profile represents not so much a strength in spatial reasoning as a weakness in both verbal and quantitative reasoning abilities. These students need activities both in and out of school that will develop their verbal and quantitative reasoning abilities. For suggestions on improving these areas, see "Adapting Instruction to Shore Up Weaknesses," beginning on page 30. Paradoxically, students who have a relative strength on the Nonverbal Battery tend to obtain **lower** scores on some portions of standardized achievement tests than those of students with the same levels of verbal and quantitative abilities but an **N–** profile. Most achievement tests do not measure spatial reasoning. A strength in and preference for spatial reasoning runs counter to the predominantly linear and verbal modes of thinking required by conventional schooling. Although much effort is directed toward the development of students' verbal and, to a lesser extent, quantitative reasoning abilities, very little effort is made to develop their spatial reasoning abilities. Yet these abilities routinely play an important role in high-level learning and in creative contributions in mathematics, science, engineering, and the visual arts. Like verbal and quantitative reasoning abilities, spatial reasoning abilities respond to instruction.

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Relative Strength in Nonverbal Reasoning (N+), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics, *continued*	Students with a nonverbal strength often perform less well on tasks that require verbal fluency, such as speaking and writing. Indeed, extremely high levels of spatial ability are associated with a diverse array of specific verbal problems such as stuttering, difficulty learning phonics, poor spelling, and difficulty speaking foreign languages.
Relative Strength	The suggestions in this section are based on the interpretation that the **N+** profile represents a strength in spatial thinking. Indicators of a relative strength in nonverbal reasoning include the following: • Students tend to prefer visual mental models when solving problems. They respond well to texts that contain difficult graphics and prefer maps to verbal directions. • Learning is easiest for these students when they can readily connect each new concept or relationship with a mental or physical model (e.g., a schematic drawing) of the situation. At younger ages, these students learn most readily when the concepts described in textbooks and other media have previously been experienced concretely and can subsequently be applied concretely.
Building on Strength	Instructional opportunities to build on students' strength in nonverbal reasoning include the following: • For young students, provide reading texts that contain detailed illustrations, especially for unfamiliar content for which the students cannot form their own mental model. • In all areas of the curriculum, but especially in science and mathematics, use metaphors, analogies, and real-world examples to help students connect unfamiliar, abstract concepts to more familiar objects or experiences. Such relationships not only enable students to understand but also greatly facilitate retention and transfer. • When material is presented verbally at a rapid or inflexible rate, allow students to control the rate at which the information is presented (such as pausing and replaying a video presentation). • Encourage students to create drawings when solving problems in mathematics, concept maps when taking notes, or mental models of a scene when reading a text. For young students especially, ask, "What do you see?" and allow them to describe a mental picture. Ask older students to illustrate the scene. • Provide a hands-on approach to learning. Relate student interests to traditional, academic subjects and offer physical applications for problem solving. • When teaching writing, encourage these students to try descriptive rather than narrative prose. Provide examples of good descriptive prose. Have them first envision the scene they would like to describe before they attempt to describe it to someone else. • Encourage the development and application of these students' spatial reasoning and thinking abilities. These students are often quite skilled in the visual arts and can excel in trades such as carpentry, landscaping, interior decorating, product design, and computer graphics.

Adapting Instruction to Shore Up Weaknesses

Ability profiles with a **V–**, **Q–**, or **N–** indicate a **relative weakness** on the respective *CogAT* battery. When a student displays a significantly lower score on one of the three batteries, it typically indicates a preference for thinking in one cognitive domain (verbal, quantitative, or nonverbal) rather than another.

Profiles that show an extreme (**E**) weakness are most common for students with a median age stanine of 9. Indeed, for students with a median age stanine of 9, profiles that show a significant or extreme weakness are almost as common as relatively flat (**A**) profiles. This is one reason why the *CogAT* author discourages use of the overall *CogAT* composite score to identify academically talented students.

The information that follows offers suggestions on adapting instruction to shore up a weakness indicated by a student's *CogAT* ability profile.

Relative Weakness	Cognitive Domain	Page
V–	Verbal	30
Q–	Quantitative	32
N–	Nonverbal	33

Relative Weakness in Verbal Reasoning (V–)

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics	These students prefer nonverbal (visual) or quantitative reasoning and often find it difficult to translate their thoughts into words. Over time, this propensity causes a lag in their development of verbal abilities of all sorts, including the ability to reason with words. Verbal skills are so critically important for school learning, however, that these students must be encouraged to develop and use their speaking, reading, and listening abilities. Students with this profile often have lower scores on achievement tests than would be expected on the basis of their median age stanine. Students who exhibit relatively poor verbal skills often do so because they do not routinely participate in conversations that involve formal language structures or meaningful dialogues.
Relative Weakness	Indicators of a relative weakness in verbal reasoning include the following: • Activities that are unnecessarily verbal thwart the students' performance even in areas in which they excel. Common sources of difficulty are directions that are overly long and tests that require the translation of verbal prompts or that require verbal responses. • Students with lower verbal scores (stanines 1–4) often find themselves overwhelmed in the classroom, especially when following directions for the first time or when attempting to transfer their attention between different verbal activities. For example, this situation can occur when students are required to view a rapidly paced video presentation and take notes at the same time.

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Relative Weakness in Verbal Reasoning (V–), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Shoring Up the Weakness	The critical importance of verbal reasoning abilities for success in school requires that relatively more effort be expended improving these abilities than would be expended to improve a relative weakness in quantitative or, especially, nonverbal reasoning. Suggestions for adapting instruction for these students include the following: • To improve performance and reduce frustration, reduce the demands placed on verbal working memory. For example: – Do not expect these students to keep in mind a verbal statement and apply it at the same time. Allow the student to use a prompt, such as a written statement of the concept or strategy needed for the work at hand. – Offload monitoring to another student by having students work in pairs. – Allow many opportunities to practice a new strategy in diverse contexts. – Help students who scored at lower stanine levels to identify the conditions that cue possible use of a new reasoning strategy. Then try to arrange for such conditions to occur unpredictably. The goal is for students to learn to call up and use different procedures as circumstances demand and not rely on fixed strategies in all cases. • To improve students' verbal reasoning abilities, provide exposure to individuals who model hoped-for styles of verbal discourse and verbal reasoning as well as opportunities to engage in conversations in which they practice these speech patterns. • Offer a broad language curriculum that combines reading, writing, and speaking as well as opportunities to practice and receive feedback on each. Keep in mind that at all levels, language-related reasoning begins with the oral and external; only after much practice does a reasoning strategy become internalized and automatic. • Acquaint students with unfamiliar ways of conversing and writing by providing opportunities to imitate the speaking and writing styles of individuals they admire. Drama, poetry, and storytelling are particularly useful in this regard. After students practice the language forms and syntactic structures orally, they can more readily apply them in written essays and stories. • Provide reading assignments and follow-up discussions or activities designed to build verbal comprehension.

Relative Weakness in Quantitative Reasoning (Q–)

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics	When compared with students who have an even (**A**) profile across all three batteries, students who display a relative weakness in quantitative reasoning tend to score somewhat lower across all portions of standardized achievement tests, especially at the primary level. The difference is largest on the mathematics, computation, and language tests. A relative weakness in quantitative reasoning abilities generally has a broader impact on the achievement of students than does a relative strength in quantitative reasoning. The connection between lower achievement on the computation and language tests could reflect a common difficulty in learning rule-based systems, or it could reflect a lack of instruction in both areas. Only someone familiar with the students and the educational curricula they have experienced can make this judgment. There are many causes of a relative weakness in quantitative reasoning. Some students have difficulty creating, retaining, and manipulating symbolic representations of all sorts. For some students, this problem seems confined to numerals; for others, however, it stems from a more fundamental difficulty in thinking with abstract, as opposed to concrete, concepts. For example, even the most elementary concepts in mathematics are abstractions. When counting objects, students must recognize that the number 3 in "3 oranges" means the same thing as the number 3 in "3 automobiles."
Relative Weakness	Indicators of a relative weakness in quantitative reasoning include the following: • Some students prefer more concrete modes of thinking and often disguise their failure to think abstractly when using verbal concepts. For example, a student may use the word *dog* appropriately but may think only about her or his dog when using the word. • For other students, the difficulty lies in the failure to develop an internal mental model that functions as a number line. For these students, solving even basic computations such as adding 2 to a given number is a challenge. When performing computations, such students often make substantial errors that they do not detect unless prompted—and even then they may not notice the errors. • And for other students, the weakness represents nothing more than a lack of experience in thinking and talking about quantitative concepts. This is fairly common in the primary grades. It surfaces again at the secondary level among those who avoid mathematics. At the middle school and high school levels, math anxiety can also be a significant issue.
Shoring Up the Weakness	Remediating a weakness in quantitative reasoning requires an understanding of the source of the deficit. Select strategies from the following list that seem most appropriate for the student and the learning situation: • If students have difficulty reasoning abstractly, help them focus on the quantitative aspects of a stimulus while ignoring more compelling perceptual features (as in the previous example of 3 oranges/3 automobiles).

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Relative Weakness in Quantitative Reasoning (Q–), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Shoring Up the Weakness, *continued*	• If students have not established or cannot readily use a mental model for representing numeric quantities, give them practice in drawing a number line and then trying to envision and use a mental number line to solve basic addition and subtraction problems. It will take a substantial amount of practice before they can automatically conceive and use a mental number line to solve problems. • If the difficulty is a lack of experience or the presence of anxiety, provide greater structure, reduce or eliminate competition, reduce time pressures, and allow students greater choice in the problems they solve. Experiencing success will gradually reduce anxiety; experiencing failure will cause it to spike to new highs. • Help these students discover how to use their better-developed verbal and spatial reasoning abilities for solving mathematical problems. At all grades, but especially in middle school and high school, encourage these students to develop the habit of restating mathematical expressions in words. Encourage them to talk about mathematical concepts rather than silently solving problems on work sheets or computer screens. When learning computation skills, they can recite mathematical facts orally and in groups. • Provide opportunities for these students to exploit their stronger spatial reasoning abilities by encouraging them to create drawings that represent essential aspects of a problem. Show them how drawings can range from concrete depictions of the objects described in the problem to increasingly abstract representations that capture only the essential aspects of the problem. • Encourage students to use computers and other tools to offload lower-level computation processes and to focus instead on higher-level concepts. This is often best done using graphic representations of geometric and algebraic concepts.

Relative Weakness in Nonverbal Reasoning (N–)

Research-based Principle	Guidelines for Adapting Instruction
Learner Characteristics	The implications of a relative weakness in nonverbal reasoning are best understood by comparing achievement test scores for such students with the scores of students who have similar levels of verbal and quantitative reasoning abilities but no deficit in nonverbal reasoning. At the primary and elementary levels, students with a relative weakness in nonverbal reasoning tend to have lower scores on standardized achievement tests in the areas of reading and mathematics. At the secondary level, the deficit is largest in the area of science. At all levels, but especially at the primary and secondary levels, these students also have lower composite scores on the achievement test. A weakness in nonverbal reasoning ability has more noticeable and negative consequences for achievement for average-ability students than for students who score in the high (stanines 7–8) or very high (stanine 9) range on *CogAT.*

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Relative Weakness in Nonverbal Reasoning (N–), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Relative Weakness	As with a relative strength in nonverbal reasoning, there are two explanations for a relative weakness in nonverbal reasoning: Either the student has difficulty reasoning with figural-spatial stimuli or the student has difficulty solving unfamiliar problems. Before adapting instruction for these students, try to identify the source or cause of their deficit. Consider the following possibilities: • For most students, the **N–** pattern is caused by difficulty with figural-spatial stimuli. Fortunately for them, high levels of spatial reasoning abilities are not required for success in conventionally structured schools. In fact, a relative strength in nonverbal reasoning is often more of a hindrance for students who obtain above-average scores on *CogAT.* Moderate levels of spatial reasoning abilities are required for success in school, however. Students with weak spatial reasoning abilities encounter difficulties in many areas of the curriculum, especially science and mathematics. • Sometimes the **N–** pattern indicates a difficulty solving problems unlike those encountered in school rather than a relative weakness in spatial reasoning. If this is the case, you are likely to notice a systematic decline in performance as the student moves from school-like tasks to unfamiliar tasks. Support for this interpretation may come from observations of the student's study habits and anxiety level. Difficulty in solving novel problems is suggested when the student works diligently, even obsessively, at school tasks. Such students often become anxious when placed in situations that lack clear guidelines on what they are expected to do or how they will be evaluated. Performance declines are also notable in test results. For example, in the verbal domain, the student performs best on the *Iowa Assessments*™ Language test, somewhat lower on the *Iowa Assessments* Reading tests, lower still on the *CogAT* Verbal Battery, and lowest on the *CogAT* Nonverbal Battery. A similar progression would be apparent in the quantitative domain.
Shoring Up the Weakness	Remediating a weakness in nonverbal reasoning requires an understanding of the source of the deficit. Select strategies that seem most appropriate for the student and the learning situation. Spatial reasoning abilities can improve with instruction. Educational planning for students with **N–** ability profiles should include training in the specific types of spatial thinking required by the curriculum. Start with concrete objects and physical models of concepts used in the curriculum. Then teach students to draw the model from memory. In teaching geography, for example, have students view a map of western Europe and then draw it from memory, revising the drawing after additional looks at the map. The act of drawing the map from memory will result in greater retention of the images than having students merely view the map without any drawing.

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Relative Weakness in Nonverbal Reasoning (N–), *continued*

Research-based Principle	Guidelines for Adapting Instruction
Shoring Up the Weakness, *continued*	In many learning situations, however, it will be easier for the students if instruction compensates for, or scaffolds, their poor spatial reasoning abilities. When working with these students, watch for signs that they do not understand because they cannot envision the situation or create a model to represent it. Use instructional strategies and methods such as the following: • Replace the question "Do you see…?" with the more informative "What do you see?" • Provide simple drawings that encapsulate the essential features of the visual mental model required by the problem. Then give students time to examine the drawing and to label it or coordinate it with the text. • When possible, do not require the students to shift their attention between two different locations, such as a drawing displayed on the board or LCD projector and a description of the problem in a textbook or workbook. Place the text and drawing in view together or allow students to study the drawing while you read the problem aloud or explain it to them rather than requiring students to read the text themselves. • Avoid problems that require transformation of images such as imagining how the drawing would appear from another perspective or following a dynamic transformation. Use computer graphics or physical models to display such transformations. This can be especially helpful in mathematics. • Allow students to inspect and physically manipulate objects if necessary. • In writing, encourage these students to write narratives rather than descriptions. • When teaching strategies, summarize them in short verbal statements that can be rehearsed and committed to memory. When practicing strategies, encourage these students to repeat (aloud) the statements as they perform each step. • In mathematics, emphasize strategies that can be summarized verbally. Offload the need for students to visualize by providing drawings, using computer graphics, or having students work in groups in which a partner performs this part of the task. If, on the other hand, the **N–** score pattern seems to reflect a difficulty solving problems unlike those encountered in school rather than a relative weakness in spatial reasoning, a different strategy is called for. • Provide gentle encouragement to engage the students in discovery learning. A student's problem-solving skills need to be stretched to apply to increasingly unfamiliar, usually less-structured situations. Stretch gently; such students can be overwhelmed if the task demands too much insight, creativity, or transfer, or if they perceive criticism rather than encouragement in the feedback they receive. • Encourage and reward small steps away from familiar tasks toward tasks that are less familiar and increasingly less structured. This approach gives students practice in assembling and reassembling strategies to solve new problems. It also helps students develop a willingness to attempt the unfamiliar, which is equally important.

Adapting Instruction for Mixed Ability Profiles

C Profiles Explained

C profiles show a significant contrast between the student's highest and lowest battery scores. The general pattern for **C** profiles is one high score (a relative strength), one middle score, and one low score (a relative weakness). Sometimes all three scores differ significantly from one another.

In a *CogAT* report that graphs a student's battery scores, scores that differ significantly have confidence bands that do not overlap. If the bands around two scores overlap, those scores do not differ significantly from one another.

In the example below, Verbal and Quantitative scores differ significantly. For this student, Quantitative is a relative strength and Verbal is a relative weakness.

STUDENT NAME I.D. Number 1 I.D. Number 2 A B C D E F G H I J K L M N O P Z	Birth Date Age Program	Level Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph (1 10 25 50 75 90 99)	Ability Profile
Gambosi, Olivia 0000146921	06/04 08-04	9 7	(F)	Verbal	62	62	26	174	93	33	4	27	4	41	5	33	5C (V-Q+)
				Quantitative	52	52	27	186	104	60	6	54	5	70	6	60	
				Nonverbal	56	56	30	188	102	55	5	53	5	63	6	55	
				Composite (VQN)				**183**	**99**	**48**	**5**	**41**	**5**	**53**	**5**		

Achievement Test Performance

The achievement test scores of students who have **C** profiles generally fall midway between the scores for the two corresponding **B** profiles. For example, students with the ability profile **4C (V+ Q–)** show achievement levels that are approximately midway between those shown by the students with **4B (V+)** and **4B (Q–)** profiles. This means that the consequences for achievement test scores for students with **C** profiles are smaller and less easily summarized than those for students with **B** profiles.

Adapting Instruction for Students with Mixed Ability Profiles

Students with **C** (mixed) ability profiles are the most challenging to assist with planned interventions. This challenge occurs because it is often difficult to know when particular instructional methods or materials will capitalize on the students' strengths or, instead, compensate for their weaknesses. For example, students who have difficulty creating and reasoning with mental models often perform much better if given a concrete model or a line drawing to work with when attempting to understand a problem. If the model or graphic is too complex, however, encoding it requires spatial reasoning that may exceed a student's capabilities.

The line between compensation for a weakness and capitalization on a strength is, therefore, often difficult to discern in advance. These effects differ among students depending on the complexity of the model, a given student's familiarity with it, and the level of each student's spatial or figural reasoning abilities.

When a student has both a relative strength and a relative weakness, as in a **C** profile, it becomes very difficult to know how a given intervention will be perceived and processed by the student. Plan a strategy based on your knowledge of the student's learning preferences and challenges and your experience with the curricular materials.

Ultimately, the learners' ease and success as they try to navigate their way through a lesson, a unit, and, eventually, a course help you determine whether a strategy is working as planned. Therefore, although all learners should be encouraged to develop strategies for regulating their own learning, such self-monitoring and self-reflection are particularly important for students with mixed patterns of cognitive strengths and weaknesses.

Help these students understand that the process of learning, using, and then evaluating different strategies is similar to the process of trying on different articles of clothing to see how they fit. Explain that, like clothing, the strategy that fits best now may change as they mature or as the context varies.

Part 4 Measuring Cognitive Development to Help Identify Academically Talented Students

In Brief

Using *CogAT* as a measure of cognitive development provides you with a more complete picture of students' abilities across the spectrum of academic achievement. *CogAT* Form 7 is the result of extensive revision of Form 6; the test continues to provide critical information on the cognitive strengths and weaknesses of an increasingly diverse student population.

Assuming you have a talent identification and development program in place, this part of the guide serves two purposes:

- It summarizes selection-process principles commonly recognized as good practices in talent identification.
- It explains how to use *CogAT* results to help identify academically talented students.

Identifying Academically Talented Students

Many schools establish special academic programs to provide challenging learning environments for students who are exceptional for their age in learning, problem solving, and achievement. CogAT can provide unique information to assist in the identification of such students.

Selection-Process Principles

Some general principles apply to the selection process:

- Consider framing the decision in terms of talent identification and development rather than deciding whether a student is or is not gifted. This approach is especially helpful when the goal is to increase the diversity of students served by the program.
- When defining the manner in which *CogAT* scores will be used for selection, consider the types of educational services offered. For example, if your school offers only single-subject enrichment, you will review scores differently than if your school provides whole-grade acceleration only.
- Use multiple measures in the selection process and combine them appropriately. In addition to *CogAT*, include measures of achievement and self-evaluation or teacher ratings of interests and motivation.
- Use the information in all three *CogAT* scores, not merely the overall composite score. Expect that many talented students will show a significant or even substantial relative weakness on one test battery.
- Consider using multiple perspectives—national age norms, national grade norms, local norms, and within-group ranks—when interpreting scores.

National versus Local Norms in Talent Identification

Norms make it possible to make data-based statements about students' relative strengths or weaknesses.

Advantages of National Norms

National norms compare the scores of your test-takers with a common standard defined by the performance of a representative national sample of students of the same age or in the same grade. When you administer the test to a new class of students, national norms provide a well-developed standard that allows you to see variation in the abilities of students being considered for talent development programs.

Advantages of Local Norms

The primary limitation of national norms is that they do not take into account local variations in ability or achievement. Policies that require all students in a school system or state to attain the same level of excellence on a nationally normed test can be problematic: such criteria result in some schools without any students served by a talent development program and other schools in which a substantial portion of the student population is labeled "gifted."

The need for special instructional or academic programming at the local level depends on the discrepancy between a student's current level of cognitive or academic development and that of his or her classmates—not that of all other students in the nation. Local norms serve this purpose.

Local norms are created from the distribution of standard age scores for a particular group (e.g., school or school system) that are scored at the same time. Standard age scores use the power of national norms to control for the effects of age. If all students tested were in the same grade and tested at approximately the same time, then the effects of grade are also controlled.

Local norms typically represent the performance of only a particular sample of students for the year in which the test is administered. Schools can update local norms by appending test scores for each new group of students to the file of scores of previously tested students. This is easily done in any spreadsheet (details in "Nontraditional uses of traditional measures"; Lohman, 2011; see citation in "Other Resources" on page 50).

Example: National and Local Norm Perspectives

Different score types allow you to interpret a student's test results from different normative perspectives. A result that is not unusual from one perspective may be distinctive when viewed from another perspective. The report excerpt below illustrates this point.

Excerpt from a Score Report for *CogAT* Form 7

STUDENT NAME I.D. Number 1 I.D. Number 2 A B C D E F G H I J K L M N O P Z	Birth Date Age Program	Level Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph 1 10 25 50 75 90 99	Profile
Kuehn, Payton	01/04	9	(F)	Verbal	62	62	54	185	111	75	6	76	6	82	7	75	
0000151280	08-09	7		Quantitative	52	52	35	167	99	48	5	45	5	51	5	48	5B (V+)
				Nonverbal	56	56	26	164	97	43	5	41	5	47	5	43	
				Composite (VQN)				172	102	55	5	54	5	60	6		

Scores in the columns for Age Scores and Grade Scores use national norms. The Local Scores column reports percentile ranks (PRs) for the distribution of standard age scores in the group tested (local norms). The value of each perspective depends on the inferences that will be made from the test scores. If the goal is to identify the most-talented students in a particular school or school system, then local norms provide critical information.

For example, scores on the Verbal Battery for Payton Kuehn would not be considered remarkable when compared with those of all other students in the nation. Payton's national age PR for Verbal is only 75, and her national grade PR is only slightly higher at 76. However, her local PR for Verbal is 82. Given Payton's results in the context of her local peers, she may well benefit from a greater challenge than what she is currently experiencing in her classes.

Using *CogAT* Scores to Identify Academically Talented Students

Selection standards should meet three criteria:

- fairly identify academic talent among students who differ in ethnicity, economic circumstances, and familiarity with the English language
- apply to students whether they have even or uneven ability profiles
- produce the best possible match between a student's cognitive resources and the cognitive demands of the talent development program

Age- versus Grade-Normed Scores

Interpretations of scores on ability tests and judgments about academic talent generally rely on age norms, which offer a different perspective on development from grade-normed scores on achievement tests. On *CogAT*, age norms are used for the following score types:

- standard age scores
- national age percentile ranks
- local age percentile ranks

For most students, national age percentile ranks (PRs) and grade PRs do not differ greatly, so program selection based on national age PRs is an equitable criterion. When national age PRs and grade PRs do differ, it is often because the student is much older or younger than other students in the same grade. In these cases, students' scores may warrant special consideration.

Students who are older than their grade peers will have lower age PRs than grade PRs because their scores are being compared with those of students of the same age, some of whom are in higher grades and have had more schooling. Therefore, these older students are less likely to qualify for programs for the academically talented if you use *CogAT* standard age scores or national age PRs rather than national grade PRs to make that decision. An older student with very high grade PRs may need a greater academic challenge even if his or her age PRs do not meet the criteria set for your program for academically talented students.

Composite and Partial Composite Scores

Requiring a high composite score for all three batteries eliminates many of the most-able students. The composite most accurately summarizes the abilities of students who have an **A** profile (all *CogAT* scores are at approximately the same level) and least accurately summarizes the scores of students with an **E** profile (two *CogAT* scores show an extremely large difference). Therefore, when identifying gifted students, the profile of scores on all three batteries provides a better indicator of cognitive development than the overall composite score alone.

Although the overall composite must be used with care, the quantitative-nonverbal (QN) partial composite score can be quite helpful for talent identification. (**Note:** The QN partial composite is an optional score available on some paper-based *CogAT* score reports. Contact your Riverside Insights Assessment Consultant for availability information.)

The QN partial composite is useful for these reasons:

- It better predicts achievement in mathematics and some technical domains than either the Quantitative Battery or Nonverbal Battery alone.
- It allows for meaningful score interpretation for English language learner (ELL) students since none of the items on either the quantitative or nonverbal tests require language.

The verbal reasoning score, on the other hand, is the best predictor of success in a wide range of achievement domains that rely heavily on language.

Considerations for Different *CogAT* Score Patterns

It is important to understand the issues that arise for students with different score patterns before reviewing recommendations for using *CogAT* scores. The following are explanations and examples of issues regarding two types of ability profiles:

- even patterns (**A** profiles)
- uneven patterns (**B** or **C** profiles)

A Profiles

When schools set a cut score for the standard age scores or percentile ranks that will determine eligibility for programs for academically talented students, issues arise regarding selecting students with even score patterns (**A** profiles). If the standard is based on **national** norms, standard age scores or age PRs will be the primary criteria.

If eligibility is based on **local** norms, local percentile ranks (LPRs) will be the primary criteria. In this case, you could still use the pattern of scores summarized in the ability profile, but the median age stanine is not as helpful since it is based on national norms. For example, a student with a profile of 7A may have LPRs that would map onto local stanine scores of 8 or 9. In either case, the **A** profile would still hold.

For ease of discussion, national norms are used in the examples that follow.

The usefulness of relatively flat or **A** profiles depends on the kinds of programming options available. Consider the following examples:

- **Whole-grade acceleration** requires advanced reasoning and achievement in multiple domains. Students with strong scores on all three *CogAT* batteries are more likely to succeed than students with uneven profiles, especially if the relative weakness is in verbal or quantitative reasoning.
- **Single-subject acceleration** or enrichment activities in a particular domain are more likely to require more domain-specific reasoning abilities. For example, a student with strong scores on the QN partial composite and excellent mathematics achievement may be a strong candidate for acceleration in mathematics. The student with strong scores on all three batteries would also be a strong candidate for single-subject acceleration.

As the preceding examples illustrate, the problem with academic enrichment programs requiring students to have **A** profiles and high composite scores lies not in the students admitted to such programs but in the highly able students who are not admitted.

B and C Profiles

Approximately 60 percent of students who obtain a median age stanine of 9 have significantly uneven score patterns (**B** or **C** profiles). These high-scoring students are much more likely to have a relative weakness on one of the three batteries than a relative strength. Most surprising is that these high-scoring students are much more likely than others to show an extreme relative weakness. At Levels 9–17/18, only 3.2 percent of average-ability students show an extreme weakness. However, among the most-able students at these levels, that percentage is 16.2, or five times more likely. In fact, as many of these very able students with a median stanine of 9 show a significant or extreme weakness as show a flat profile. This underscores the importance of measuring reasoning abilities in multiple domains rather than in a single domain, especially for students who have extremely high or low scores.

When students have very high scores on two batteries, their composite scores can also be very high, that is, above the 90th percentile. Nevertheless, these composite scores can be misleading because they sometimes conceal a weakness in a cognitive area that is essential for high-level achievement in a particular program of study.

Talent Identification Case Studies

When identifying academic talent among students who are native speakers of English, emphasis should be placed on the verbal and quantitative abstract reasoning skills that are fundamentally involved in almost all higher-level academic learning tasks. The problems that arise in using the composite score for such students can be illustrated by case studies based on the four students whose *CogAT* scores are shown in the table on the next page.

***CogAT* Scores for Students with Uneven Score Patterns**

	Student 1			Student 2			Student 3			Student 4		
	SAS	PR	S	SAS	PR	S	SAS	PR	S	SAS	PR	S
Verbal Battery	140	99	9	119	88	7	118	87	7	111	75	6
Quantitative Battery	133	98	9	132	98	9	116	84	7	138	99	9
Nonverbal Battery	114	81	7	130	97	9	143	99	9	143	99	9
Composite	132	98	9	129	97	9	128	96	9	135	99	9

These case studies represent frequently occurring uneven score patterns in which all scores are above average. Although these students have similar composite scores, they do not all have the same probability of attaining very high levels of achievement in a program for academically talented students.

Student 1: Strengths in V and Q, Weakness in N

Student 1			
	SAS	PR	S
Verbal	140	99	9
Quantitative	133	98	9
Nonverbal	114	81	7
Composite	132	98	9

Characteristics: Student 1 has very high scores on both the Verbal and the Quantitative batteries but a relative weakness on the Nonverbal Battery.

Recommendation: Of the four students whose scores are listed in the table above, Student 1 has the greatest probability of attaining very high levels of achievement and of being successful in any gifted and talented program. When using *CogAT* scores as part of the criteria for selecting students who are native speakers of English for talent development programs, give greater weight to the Verbal and Quantitative batteries, since those reasoning skills are fundamentally involved in almost all higher-level academic learning tasks.

Student 2: Strength in Q and N, Weakness in V

Student 2			
	SAS	PR	S
Verbal	119	88	7
Quantitative	132	98	9
Nonverbal	130	97	9
Composite	129	97	9

Characteristics: Student 2 has very well-developed quantitative and nonverbal reasoning skills but weaker verbal reasoning skills.

Recommendation: Weaker verbal reasoning skills could be a handicap in a talent development program. However, if English is not the student's first language, the lower verbal score may not be an impediment, especially in science and mathematics. Consider enrichment or acceleration in math or science.

Student 3: Above-Average on Q and V, Very High Score on N

Student 3			
	SAS	PR	S
Verbal	118	87	7
Quantitative	116	84	7
Nonverbal	143	99	9
Composite	128	96	9

Characteristics: Student 3 has a very high score in nonverbal reasoning but only above-average scores on quantitative and verbal reasoning.

Recommendation: Student 3 has the lowest probability of having high levels of achievement in any academic area and is not a promising candidate for the typical talent development program. Individuals such as Student 3 can excel, however, in programs that depend heavily on spatial and figural reasoning abilities. For ELL students, the low verbal score would be unremarkable; however, the low quantitative score is still worrisome.

Student 4: Extreme Relative Weakness in V

The composite score is especially misleading when there is an extreme relative weakness.

Student 4			
	SAS	PR	S
Verbal	111	75	6
Quantitative	138	99	9
Nonverbal	143	99	9
Composite	135	99	9

Characteristics: Student 4 has a high composite score but relatively weak verbal reasoning skills.

Recommendation: Student 4 would be likely to have trouble in many programs for academically talented students because of his or her relatively weak verbal reasoning skills. For native speakers of English, a much lower verbal score sometimes reflects a learning disability that should be further investigated (e.g., *twice-exceptional* students [students who are gifted and have a learning disability]). However, Student 4's very high scores in quantitative and nonverbal reasoning indicate that he or she may well benefit from a greater challenge in mathematics and science courses that do not depend critically on verbal skills.

Who Qualifies for a Talent Development Program in the B and C Profile Groups?

Because approximately 60 percent of students with stanines of 9 on at least two batteries have uneven ability profiles, using the composite score for such students can lead to inappropriate identification or placement of individuals in talent development programs. We strongly recommend that the overall composite **not** be used to determine admission to such programs. Students are better selected for specific educational programs based on the match between their particular cognitive strengths and the demands of the program. An extreme relative weakness suggests that the student might be twice-exceptional.

Other Considerations in Identifying Academically Talented Students

Accounting for Differences in Background and Experience

Inferences about an individual student's intellectual ability from test scores, classroom activities, projects, and other behavioral evidence are judgments based on observing student behavior given individual opportunities to learn. More-able individuals learn in a few trials what less-able individuals require many trials to learn. However, if for any reason a student's learning opportunities have differed markedly from those of students of the same age or in the same grade, these normative comparisons based on age or grade will underestimate or overestimate the student's ability to learn. For example, the intellectual abilities of students who live in poverty, who have had irregular or poor schooling, or who have little or no experience with the language of instruction (or testing) can be underestimated when their behavior is compared with that of all other students of the same age or in the same grade.

The challenge, then, in selecting students for talent development programs is to account for major differences in opportunity to learn. There are two ways to do this:

- To the extent possible, avoid aspects of a test (e.g., language) that disadvantage some students when measuring abilities.
- Compare the student's test scores with the scores of other students who have had roughly similar opportunities.

CogAT is designed to allow both ways of controlling for opportunity to learn. For example, the test is designed to reduce or eliminate the impact of language on the test itself. When the Sentence Completion subtest is excluded for ELL students, none of the subtests at Levels 5/6–8 use items that require language. The *CogAT* Form 7 Verbal and Quantitative batteries are even more effective in this respect than the Nonverbal Battery. At the upper levels, none of the items on the Quantitative and Nonverbal batteries use language. The ready availability of practice materials can also help level the playing field.

You can also make better inferences about talent by comparing a student's score with the scores of other students (typically of the same age) who have had similar opportunities to learn. This is especially helpful in controlling for differences that are moderated by economic opportunity, but it can also be helpful for understanding the abilities of ELL students.

Removing the demands for language reduces but does not eliminate developmental inequities that stem from large differences in culture or economic opportunity. Therefore, even when using non-language tests like the *CogAT* Levels 5/6–8 batteries or the quantitative-nonverbal (QN) partial composite, it is often still necessary to take into account the student's opportunity to learn. *CogAT* data analysis and reporting tools are designed to facilitate the process.

Estimating Opportunity to Learn (OTL)

If your school used supplemental coding on *CogAT* answer documents, determine whether that coding identifies these two aspects of a student's OTL:

- English language learner (ELL) status – Use of the ELL option in the supplemental coding Programs section identifies students classified as English language learners. Additional customized coding can differentiate levels of English-language ability.
- economic status – The school's most accessible measure of family income is whether a student qualifies for free or reduced-price lunch (F/RL). The F/RL option in the Programs section indicates a student's eligibility in this program.

By using supplemental coding to group students with one or more measures of OTL, you can order score reports that separate and rank students within the different OTL groups. Alternatively, you can use *DataManager*™ to separate and sort scores or export data to a spreadsheet and perform similar analyses there (details in Lohman, 2011; see "Other Resources" on page 50).

Considerations in Talent Identification Using Within-OTL Scores

One objection to using local norms or within-group ranks is that such scores are less dependable than scores based on national norms. However, the need for precise estimates of ability is a direct consequence of trying to determine whether a student is truly "gifted." If the goal is to identify talented ELL or economically disadvantaged students who might profit from special encouragement, projects, or enrichment, there is no need for such precision.

One of the major stumbling blocks for effective talent identification among OTL students is the presumption that all talented students must receive the same kind of special instruction. In athletics, we would expect that some students with no experience swimming might have talent for the sport. But we would not expect them to immediately begin swimming at the same pace as students with many years of practice in the sport. In this example, we recognize that the inference of talent is distinguishable from a judgment about the current level of development of that talent. Similarly, identifying talent within OTL groups must be coordinated with the design of programs to serve those identified. In considering how to do this, keep in mind that encouraging interest and persistence in the pursuit of excellence is as important for talent development as the acquisition of academic knowledge and skills.

Further, unlike classmates whose parents or guardians may have greater resources, students from economically deprived households often must rely on schools to provide special services and opportunities for talent development. In many cases, some form of enrichment (rather than single-subject or whole-grade acceleration) may be most appropriate for many of these students since their academic development often will be similar to that of their regular classmates, especially in domains that require high levels of competence in the English language.

Multiple Selection Criteria

Selection Considerations

Many schools use multiple criteria to identify academically talented students. Rating scales, creativity tests, teacher ratings, and other sources of information can be helpful, but program coordinators must combine the various sources of evidence in some way.

Even when raters are well trained, ratings they provide are usually much less reliable and valid than *CogAT* scores. As a result, even assigning ratings a lesser weight in selection can be problematic. For example, when program resources are limited, every student who gains admission because of high ratings or creativity scores prevents the admission of a student with lower ratings but high ability and achievement scores. An effective way to overcome this dilemma is to use ratings (and other measures that are potentially less reliable and valid than *CogAT*) to **provide** opportunity but never to remove it.

Suggestions for Combining Criteria

The table below illustrates an approach recommended for combining *CogAT* scores and teacher ratings from the *Scales for Rating the Behavioral Characteristics of Superior Students* (SRBCSS; Renzulli, Smith, White, Callahan, Hartman, & Westberg, et al., 2004; see citation in "Other Resources" on page 50). You can use other ratings or test scores. You can also combine *CogAT* scores with scores from the *Iowa Assessments*; for example, you can use the *CogAT* Verbal score with the *Iowa Assessments* Reading Total and the *CogAT* QN partial composite with the *Iowa Assessments* Mathematics Total. (**Note:** The QN partial composite is an optional score available on some paper-based *CogAT* score reports. Contact your Riverside Insights Assessment Consultant for availability information.)

Combining Ability (*CogAT* Verbal or Quantitative-Nonverbal) and Teacher SRBCSS Ratings

		Teacher Rating on Learning Ability, Motivation, or Creativity	
		Low teacher ratings	High teacher ratings
***CogAT* Verbal or Quantitative-Nonverbal Reasoning**	(≥96th PR)	II	I
	(80th–95th PR)	IV	III

The vertical dimension of the table above distinguishes students who exhibit superior reasoning abilities in either the verbal domain or in the quantitative-nonverbal domain from those who exhibit strong but less stellar reasoning abilities in these domains. We have set two cut scores. One identifies students who score at or above the 96th PR, and the other identifies those students who score at or above the 80th PR but below the 96th PR on either verbal reasoning or quantitative-nonverbal reasoning. These PR criteria are commonly used in gifted programs. We recommend the use of local norms for this purpose, if possible, rather than national norms.

The horizontal dimension of the table distinguishes students who, when compared with others nominated for the program, obtain relatively high teacher ratings from those who obtain lower teacher ratings. Teacher ratings are considered high if any of the three ratings (learning ability, motivation, or creativity) is high.

As shown in the table on the previous page, combining these two criteria results in four assessment categories:

- Students in Category I exhibit superior reasoning abilities on *CogAT* and are rated as highly capable, motivated, or creative by their teachers.
- Students in Category II also exhibit superior reasoning abilities, but, when compared with others, they are not rated as highly by their teachers on any one of the three major scales of the SRBCSS. Programs that follow a traditional identification scheme (e.g., self-contained classrooms or schools) would accept students in both Category I and Category II. However, educators should monitor the progress of students in Category II more closely than the progress of students in Category I.
- Students in Category III exhibit somewhat lower but still strong reasoning abilities (80th to 95th PR) on *CogAT* and are rated as highly capable, motivated, or creative by their teachers. These students could be included in schoolwide enrichment programs that aim to serve a broader range of students than are served by traditional "gifted" programs (Renzulli, 2005; see citation in "Other Resources" on page 50). Schools that serve many economically deprived students may find that many of their best students fall in this category, especially when national rather than local (school) test norms are used.
- Finally, students in Category IV exhibit good but not exceptional reasoning abilities (between the 80th and 95th PR) on *CogAT* and are not rated as unusually capable, motivated, or creative by their teachers. Although these are good students, they would not be provided with special programming on the basis of either their *CogAT* scores or teacher ratings. However, educators should reconsider them when information on achievement is available.

Other Resources

Users seeking additional information on procedures for developing a talent identification and development program that encourages both equity and excellence will find the additional resources listed below helpful.

Online	*CogAT* Form 7 website www.cogat7.com The test author's website provides links to many of his recent publications. http://faculty.education.uiowa.edu/dlohman/
Print Materials	Lohman, D. F. 2011, in press. "Nontraditional uses of traditional measures." In *Fundamentals of Gifted Education*, edited by C. M. Callahan and H. Hertberg-Davis. New York: Routledge Press. **Note:** This chapter shows how to create local norms using some simple spreadsheet procedures. Examples are illustrated using score reports from the *Cognitive Abilities Test* Form 7. This information is also available online on the test author's website. Renzulli, J. S. 2005. *Equity, Excellence, and Economy in a System for Identifying Students in Gifted Education: A Guidebook* (RM05208). Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut. Renzulli, J. S., Smith, L. H., White, A. J., Callahan, C. M., Hartman, R. K., Westberg, M., Gavin, K., Reis, S. M., Siegle, D., and Sytsma, R. E. 2004. *Scales for Rating the Behavioral Characteristics of Superior Students* Mansfield Center, CT: Creative Learning Press.

Part 5 Identifying Ability-Achievement Discrepancies

In Brief

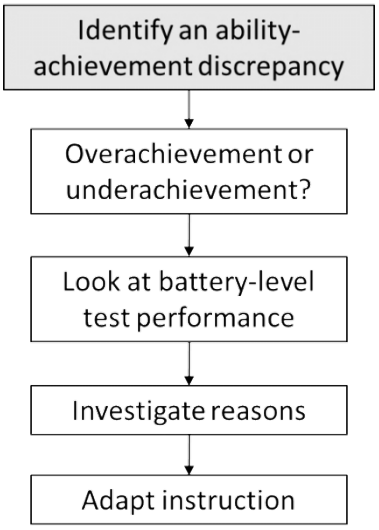
Are students underachieving, overachieving, or performing in line with their abilities? Results from the *Cognitive Abilities Test* (*CogAT*) provide a measure by which to identify ability-achievement discrepancies.

This part of the guide explains the following actions:

- Use *CogAT* results to identify ability-achievement discrepancies.
- Follow a process to identify likely explanations for ability-achievement discrepancies.
- Interpret and act on these discrepancies.

The flowchart at the right illustrates the process for taking action after identifying that a discrepancy exists.

Note that if no discrepancy is found, you can bypass these steps and refer to "Part 3: Adapting Instruction to Students' Needs and Abilities," beginning on page 11.



Using *CogAT* to Identify Ability-Achievement Discrepancies

The Relationship between Ability and Achievement Test Scores

Interpreting discrepancies between reported and predicted achievement requires a fundamental understanding of what achievement and ability tests measure.

Ability tests (e.g., *CogAT*) measure learned reasoning abilities. Reasoning abilities are developed indirectly through instruction as well as through a wider range of experiences.

Although tests measure different aspects of developed abilities, reasoning abilities are good predictors of academic achievement.

Achievement tests (e.g., the *Iowa Assessments*) aim to measure knowledge and skills explicitly taught in the schools.

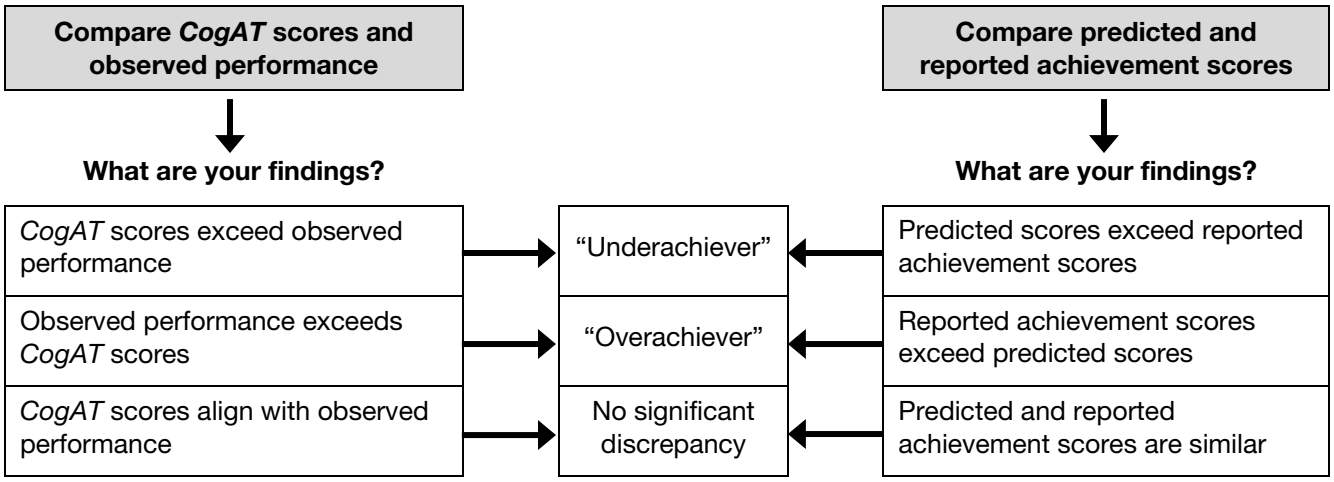
The following analogy helps to explain the relationship between ability and achievement.

Picture a physician's height-and-weight chart. Height and weight are different aspects of physical development, just as school achievement and reasoning abilities are different aspects of cognitive development.

Increases in height do not, in and of themselves, **cause** corresponding increases in weight; similarly, increases in reasoning abilities do not **cause** increases in achievement. In other words, lower-than-expected achievement scores do not necessarily mean that a student is "not living up to his or her potential."

Making Ability-Achievement Comparisons

The graphic below illustrates two starting points for identifying discrepancies between ability and achievement. Both starting points involve using *CogAT* results to form a preliminary conclusion about a student's performance.



The rest of this section of the guide explains how to use both of these methods to identify ability-achievement discrepancies.

Comparing *CogAT* Scores and Observed Classroom Performance

If you work with students on a regular basis, you probably make intuitive estimates of their abilities. Students' curiosity, ease in learning, quiz results, state achievement scores, report card grades, work samples, and other evidence observed in the classroom help you form estimates of their abilities.

Comparing *CogAT* results with your own intuitive estimates is one way to identify discrepancies between measured ability levels and students' performance in the classroom.

To identify discrepancies using this method of comparison, follow these steps:

1. Form an estimate of ability based on your observations of a student's performance. Mentally rank his or her performance as above average, average, or below average.

2. Locate the student's composite SAS on a *CogAT* score report.
3. Compare your ability estimate with these composite SAS ranges:

Your Ability Estimate	Composite SAS Range	Composite Age Stanine
Well above average	120 or higher	8–9
Average	89–111	4–6
Far below average	80 or lower	1–2

Note: Performance and even personality differences distinguish students who are well above average and those far below average. Gaps in the SAS ranges allow for the "gray areas" around average performance.

4. What are your findings?

CogAT score exceeds estimated ability	→ "Underachiever"
Estimated ability exceeds *CogAT* score	→ "Overachiever"
CogAT score aligns with estimated ability ranking	→ No significant discrepancy

Next Steps

Realize that your performance estimates reflect how well students *use* their cognitive abilities, whereas the *CogAT* scores describe the kinds and levels of cognitive abilities the students have. When your estimates and the test scores differ, both could be correct.

A discrepancy between students' levels of cognitive abilities and their effectiveness in using them is an important one to note when interpreting test scores and planning instruction. Refer to "Interpreting Discrepancies and Taking Action" on page 55 for guidance on how to act on your findings.

Comparing Predicted and Reported Achievement Scores

Direct comparisons of scores on ability and achievement tests can be misleading for students whose scores are considerably above or below average. Students who obtain a very high score on one test are expected to obtain a somewhat lower score on the other test. Conversely, two very low scores are much less likely than a low score on one test and somewhat higher score on the second test.

Instead of directly comparing ability test scores and achievement test scores, we compare achievement test scores with **predicted** achievement test scores. If your students have taken the *Iowa Assessments* and *CogAT*, combined score reports allow you to compare predicted and reported achievement scores.

If your school ordered combined score reports with predicted achievement scores, interpret those scores with these three points in mind:

- The predicted achievement score, based on the student's *CogAT* results, is a mathematical average of the range of achievement scores that a population of students with each SAS received in *CogAT* standardization studies.
- DIFF scores indicate the difference between actual and predicted scores. For example, if a student's Reading standard score (SS) is 214 and his or her predicted standard score (PSS) for Reading is 212, his or her Reading SSDIFF is +2 (the result of 214 – 212).
- Options selected when reports were ordered determine which DIFF scores appear on the reports. There are three options for suppressing scores:
  - middle 68 percent of DIFFs suppressed
  - middle 80 percent of DIFFs suppressed

    This range is the most common (and default) reporting option. DIFF scores appearing on the report lie in the top or bottom 10 percent of the distribution of achievement scores at a given ability level. That means that, on average, 80 percent of student DIFF scores are not reported.
  - middle 90 percent of DIFFs suppressed

For example, in the sample below, note that none of Payton Kuehn's grade equivalent (GE) scores exactly match the corresponding predicted grade equivalent (PGE) scores. On two *Iowa Assessments* subtests (Written Expression and Computation), however, the report notes significant differences (GEDIFF) between her GE and PGE scores.

STUDENT NAME / I.D. Number 1 / I.D. Number 2	Birth Date / Age / Program	Level / Form	(Gender)		ENGLISH LANGUAGE ARTS								MATHEMATICS			CORE COMPOSITE	Social Studies	Science	COMPOSITE
Calculator					Reading	Written Expression	Conven. of Writing	Vocabulary	ELA TOTAL	Word Analysis	Listening	EXT. ELA TOTAL	Mathematics	Computation	MATH TOTAL				
ABCDEF G H I J K L M NOPZ																			
Kuehn, Payton	01/04	10	(F)	SS	188	182	184	187	185	187	188	188	168	162	165	175	173	175	175
0000151260	08-09	E		PSS	190	195	193	192	203	191	190	191	176	178	178	179	176	183	183
				SSDiff		-13								-16	-13				-8
CogAT Form 7 Level 9	No. Items	No. Att	Raw Score	NPR	74	63	67	71	68	72	74	73	35	26	30	50	46	51	50
	AGE SCORES SAS	PR	S	PNR	76	83	81	80	92	78	76	78	52	56	56	58	52	65	65
	GRADE SCORES PR	S		NPRDiff		-20								-30	-26			-14	-15
Verbal	62	62	54	GE	4.0	3.6	3.7	3.9	3.8	3.9	4.0	4.0	2.8	2.4	2.6	3.2	3.1	3.2	3.2
	111	75	6		76	6													
Quantitative	52	52	35	PGE	4.1	4.4	4.3	4.2	5.0	4.2	4.1	4.2	3.2	3.4	3.4	3.5	3.2	3.7	3.7
	99	48	5		45	5													
Nonverbal	56	56	26	GEDIFF		-0.8			-1.2	-0.3	-0.1			-1.0	-0.8				-0.5
	97	43	5		41	5													
Composite (VQN)	**102**	**55**	**5**	NS	6	6	6	6	6	6	6	6	4	4	4	5	5	5	5
	54	**5**																	
Ability Profile	5B(V+)																		

To identify discrepancies using a combined *Iowa Assessments*/*CogAT* report, follow these steps:

1. Locate achievement scores for which predicted results are also reported.
2. Make special note of high or low DIFF scores, which indicate a statistically significant discrepancy.
3. What are your findings?

DIFF is a negative number	→ "Underachiever"
DIFF is a positive number	→ "Overachiever"
Reported achievement score and predicted result are similar	→ No significant discrepancy

Next Steps

The benefit of identifying discrepancies between ability and achievement scores is to alert you to situations that warrant further investigation.

The next topic explains considerations for students with flagged score discrepancies as well as for those who have no discrepant scores.

Interpreting Discrepancies and Taking Action

When *CogAT* scores and observed achievement (either classroom performance or *Iowa Assessments* results) differ significantly, further investigation is warranted.

Comparing Observed and Predicted Achievement

The table below compares traditional explanations for discrepancies between observed and predicted achievement with alternative explanations derived from *CogAT* scores.

Interpreting Discrepancies between Observed and Predicted Achievement

Discrepancy	Traditional Explanation	Possible Alternative Explanations/ *CogAT* Score Pattern
Predicted achievement exceeds observed achievement – "Underachievement"	Most likely a result of poor effort or poor schooling	Students are particularly good at solving novel problems. Their ability to transfer verbal and/or quantitative knowledge and skills acquired in school is better than expected. If this is the case, scores on the *CogAT* Verbal Battery and/or Quantitative Battery are likely to be higher than scores on the Nonverbal Battery.
Observed achievement exceeds predicted achievement – "Overachievement"	Most likely a result of good effort or good schooling	Students do well on tasks that were taught but not as well on unfamiliar tasks. Their ability to transfer verbal and/or quantitative knowledge and skills is limited. If this is the case, scores on the *CogAT* Verbal Battery and/or Quantitative Battery are likely to be lower than scores on the Nonverbal Battery.

Underachievement

Students whose *CogAT* scores exceed observed achievement are much better at solving unfamiliar problems than at solving the sorts of tasks more typically studied in school. Traditional explanations of underachievement might suggest the following:

- The student has not applied himself or herself with sufficient diligence to school learning.
- The student has not had appropriate opportunities to develop the types of knowledge and skills common to classroom instruction and achievement tests.

But the score pattern could also mean that the student is particularly good at transferring his or her learning to unfamiliar, unpracticed contexts.

To determine which interpretation is most likely for a particular student, review his or her *CogAT* battery scores rather than the composite score.

If you find…	Then this suggests…
A relative strength on the Nonverbal Battery (indicated by N+ in the ability profile)	The "underachievement" interpretation is plausible. Discrepancies between observed and predicted achievement based on the nonverbal score are generally greater and more reliable than predictions based on the verbal or quantitative scores.
A relative strength on either the Verbal (V+) Battery or the Quantitative (Q+) Battery	The student may have adopted a learning style that emphasizes memorization of content and skills. The student relies more on these low-level skills than on meaning-making and meaning-finding, which would make better use of his or her reasoning abilities. Encourage the student to search for ways in which new knowledge and skills connect to other knowledge and skills, especially in other domains. Then describe these connections. For example, say "This is like what we learned earlier this year (or in another class)." Based on the student's scores, refer to relevant portions of "Part 3: Adapting Instruction to Students' Needs and Abilities," beginning on page 11.

Although clues offered by the *CogAT* ability profile can be helpful, interpretation of discrepancies between ability and achievement test scores ultimately depends on the simultaneous consideration of many factors, such as opportunity to learn, motivation to learn, temperament, and the presence of specific physical and learning disabilities.

Overachievement

When observed achievement exceeds predicted achievement, traditional explanations might suggest the following:

- Such students have applied themselves well to school tasks and have acquired higher levels of knowledge and skills than one would predict, given the level of their reasoning abilities.
- The students' problem-solving strategies are relatively context bound.

Whether because of restrictions imposed by experience or by temperament, students who have not learned to stretch their school learning beyond practiced contexts show this pattern of relatively higher scores on achievement tests and conventional classroom measurement tools than would be predicted from their scores on *CogAT*.

Once again, examination of the student's ability profile across the three *CogAT* batteries can help you make an appropriate interpretation.

If you find…	Then this suggests…
A relative weakness on the Nonverbal Battery (indicated by N– in the ability profile)	An interpretation that emphasizes unusually good effort and schooling
A relative weakness on either the Verbal (V–) Battery or the Quantitative (Q–) Battery	A need for greater flexibility and transfer in school learning

Expected Levels of Achievement

On reports showing results from both the *Iowa Assessments* and *CogAT*, the default is to flag scores if observed achievement is in the top or bottom 10 percent of the distribution of achievement scores at a given ability level. (Your school system may have selected a larger or smaller range, however.) After identifying students with such score discrepancies, do not ignore the students whose scores were not flagged. In particular, do not assume that students whose scores are not flagged are "doing about as well as can be expected."

Consider once again the analogy to height and weight. Just because a certain weight is not unusual for a certain height does not mean that both are not unusual in some respects. For example, a child whose physical development lags behind that of his or her peers frequently weighs less and is shorter than his or her age-mates.

Look for instances in which observed and predicted achievement test results are aligned but unusually high or low for the student's age or grade level.

Taking Action

All abilities are developed through experience and exercise. Students who show large extremes in either direction (higher achievement than ability or higher ability than achievement) have important imbalances in their cognitive development that merit closer scrutiny. Comparing *CogAT* and *Iowa Assessments* scores allows you to conduct a closer evaluation at the *Iowa Assessments* subtest level.

See "Part 3: Adapting Instruction to Students' Needs and Abilities," beginning on page 11, for suggestions based on the *CogAT* results for any student.

Part 6 Communicating Test Results

In Brief

This part of the guide offers suggestions on communicating *CogAT* test results to students and their families. The following topics are covered:

- "Preparing to Report Test Results to Others"
  - Before You Begin – recommended steps to take before communicating test results
  - General Reporting Strategies
  - Common Test Score Misconceptions
- "Discussing Test Results with Students"
- "Discussing Test Results with Parents"

Preparing to Report Test Results to Others

Before You Begin

To help ensure that you are working with the best information possible, take the following steps before you plan your reporting strategies:

- Verify the accuracy and completeness of the scores shown on the reports. (See "Establish the Integrity of Your Score Information" on page 4.)
- Study the reports, the scores, and this guide to learn what is being reported.
- Determine how to communicate test results in the context of the purpose for testing and the individual student.

General Reporting Strategies

Most schools and school systems establish policies for reporting test scores to students and their families. Adapt suggestions offered in this part of the guide to conform to such policies.

The best way to report test scores to students and parents is individually in a face-to-face conference. An individual conference provides an opportunity to clarify the purpose for the test and what the scores mean for that student.

The following guidelines can help make communications about test results more effective:

- **Use simple, everyday language.** Do not assume that parents and primary caregivers are familiar with the specialized terms used in educational testing.
- **Use visual displays to describe performance.** Bar graphs like those provided in the *Individual Profile Narrative* report are helpful tools for presenting numerical information.

- **Engage in a dialogue.** Encourage students and parents to ask questions about the tests, the scores, and any other concerns they have regarding the test results.
- **Anticipate and address common misunderstandings about test results.** Prepare by reviewing "Common Test Score Misconceptions" below to understand common misconceptions about *CogAT* results. Correct any misunderstandings that you anticipate or hear during discussions with students and their families.

If your school does not have the resources to hold individual conferences, use the student's *Individual Profile Narrative* report to communicate test results. Offer to answer questions about the report and arrange a conference with parents who request one.

Common Test Score Misconceptions

Misconceptions about test scores can lead to misunderstandings about student abilities and, in turn, to misguided subsequent actions. Your own understanding of these misconceptions will help you to effectively communicate test results to others and to recognize and correct misunderstandings during those discussions.

Following are some **common fallacies** about test scores **and explanations** to correct each misconception:

- **Percentile rank (PR) means the same thing as percent correct.** People who equate percentile ranks with percent-correct scores may interpret a PR of 60 or below as a failing score. Explain that the concepts of passing and failing do not apply to standardized tests of general cognitive skills and that a PR of 60 means the student scored higher than 60 percent of students in a particular reference group (either nationally for age and grade norms or within the school/district for local norms).
- **The test scores are precise and absolutely accurate.** Test scores are always estimates rather than exact measures. It is important to think of them as representing a range of ability rather than as a specific, unchanging point on a score scale. The confidence bands on the graph of each student's scores can be helpful in explaining this concept, especially if the student's responses were inconsistent.
- **The norm group consists of students in a particular classroom or school.** Norm groups should always be identified when reporting standardized test scores. For *CogAT*, norms are based on a nationally representative group of students. For age norms, the norm group is made up of students in the nationally representative group who were the same age as the student taking the test. For grade norms, the norm group consists of students in the nationally representative group who were in the same grade as the student taking the test.

  If your *CogAT* reports also show scores based on local norms, understand their purpose and why those scores may differ significantly from scores based on national norms. For more information, see "Local Norms" on page 110.
- **General cognitive ability is the only factor that is important in school achievement.** General cognitive ability affects how rapidly students learn, the conditions under which they learn most effectively, and how much they learn. Differences in levels of cognitive abilities do explain a significant amount of the

variation in achievement among students. However, many other factors matter as well: support at home, quality of instruction, motivation, out-of-school activities, and so on.

- ***CogAT* standard age scores (SAS) are IQ scores.** *CogAT* is not an IQ test. Intelligence tests differ from *CogAT* in two critical ways: 1) intelligence tests sample a broad range of abilities in addition to the reasoning abilities that *CogAT* measures and 2) intelligence tests are normed on the entire population whereas *CogAT* is normed on that subset of students who attend school and can take a group-administered test. Because of the potential confusion with IQ tests, score reports shared with parents should give national (and perhaps local) percentile ranks—not standard age scores.
- ***CogAT* scores should remain the same as the student matures.** *CogAT* does not measure fixed abilities. On average, the year-to-year stability of scores is quite good, although even highly correlated scores have room for individual variability. Composite standard age scores (SAS) for most students change less than 5 points from one year to the next. For 10 percent of the students, however, their standard age scores will change more than 10 points. Young students and those with extreme scores are more likely to have score changes than are high school students or those with an SAS near 100.
- ***CogAT* measures—or ought to measure—the innate potential or capacity of the student.** Explain that all abilities are developed, and give an analogy to physical skills to explain how this is so. The knowledge and skills that students learn in school and that are assessed by achievement tests are like students' acquired skills in playing various sports. The general reasoning abilities measured by *CogAT* are like general physical fitness. General fitness is important for success in a wide variety of sports. Using *CogAT* to predict achievement test scores is like predicting how well individuals can probably play a range of different sports given their level of physical fitness. But physical fitness is also, in part, an outcome of participation in physically demanding exercise. Similarly, the verbal, quantitative, and nonverbal reasoning abilities measured by *CogAT* are developed through participation in challenging learning activities.
- **Standardized tests are biased against minorities.** Explain that every item has been screened for potential bias by the test author and publisher and by a diverse panel of minority educators. Items are tried out on thousands of students nationwide and subjected to extensive statistical analyses for bias. All items selected for the test have been reviewed for bias and content sensitivity toward gender.

  Most questions about bias on a test such as *CogAT* stem from the assumption that a good test measures abilities independent of culture, motivation, and experience. In another analogy to physical skills, this is like asking for a measure of physical fitness that is not influenced by the physical activities in which a person has participated. Although tests vary in the extent to which they are rooted in culture and experience, all tests measure developed abilities. *CogAT* measures those reasoning abilities that are required by and developed through formal schooling.

  Explain that the Verbal Battery at Levels 5/6–8 measures the ability to reason with verbal concepts expressed in pictures and, on one subtest, in English or Spanish. As explained in the *CogAT Research and Development Guide*, scores for ELL students on

the Alternate Verbal Battery are actually higher than their scores on the Nonverbal Battery.

At Levels 9 and higher, only English is used on the Verbal tests. Students who have only limited experience with the language as it is used in schools are not likely to do as well on the Verbal subtests as they might do on tests administered in another language or dialect. The Nonverbal and Quantitative batteries are particularly helpful in estimating the reasoning abilities of these students. At all levels, ELL students actually perform as well or better on the *CogAT* Quantitative Battery as on the *CogAT* Nonverbal Battery.

Discussing Test Results with Students

Adapt your strategy and message to the developmental level of the student. Consider the suggestions summarized below.

Student Grade Level	Considerations	Discussion Strategy
Kindergarten, Grades 1 and 2	• Students may not recall taking the test. • It is unlikely that students in these grades will understand the meaning of the test scores.	No formal discussion about test results
Grades 3–5	Students are capable of understanding scores in a very general way.	• Emphasize verbal rather than numerical descriptions of their performance. • Identify particular strengths.
Grades 6–12	• Students are capable of understanding and are interested in test results. • Students may be making educational choices regarding elective courses and post-secondary school goals.	• Present results in numerical and descriptive form. • If reporting achievement test results along with *CogAT* results, use the same types of age and grade scores during the discussion, if possible. • If percentiles or stanines were reported for the achievement test, use these score types when discussing *CogAT* results.

At all levels, the primary purpose for reporting scores to students is to help them understand:

- their own patterns of achievement and general cognitive skills
- the extent to which they are using their cognitive resources

Foster understanding with a dialogue that allows students the opportunity to:

- ask questions
- explain the reasons for their test performance
- express concerns about their scores
- articulate and explore their learning styles, preferences, and interests

Discussing Test Results with Parents

The most effective way to discuss test results with parents or guardians is in a face-to-face conference. The primary goal is to help parents understand how their student learns so that they can work with the school to facilitate the student's development. If possible, provide parents with their own copy of the student's *Individual Profile Narrative* report.

If you are reporting on standardized achievement test results at the same time as *CogAT,* the following discussion points may be helpful:

- Explain that the two tests appraise different things. The achievement test appraises skills that are directly taught and practiced in school, whereas *CogAT* appraises general thinking skills that the student gradually develops from both in-school and out-of-school experiences.
- Explain that all test scores are **estimates**, not absolute measures, of a student's standing on skills such as verbal reasoning and mathematical computation. Scores on both types of tests change significantly over time.
- Use the same types of scores, if possible, to report results for both tests. Percentile ranks and stanines are easier to explain to parents than standard age scores, which may be confused with IQ scores.
- Discuss test scores and what they mean using verbal descriptions (such as very high, above average, or below average) more often than numerical values. Explain that all test scores contain a margin of error, so one should not attach too much significance to small differences in scores. Use stanines or percentile ranks, not standard age scores.
- Point out relationships between the two sets of scores. If results vary significantly (see "Part 5: Identifying Ability-Achievement Discrepancies," beginning on page 51), probe causes such as learning styles, motivation, and possibly language/educational background in an effort to partner with the parents on solutions for improvement. If both sets of results are relatively poor, focus on the tests with the highest scores and strategize how to build on relative strengths.

Parent-Teacher Discussion Topics

This section contains a list of topics to consider when discussing a student's *CogAT* test results with parents or a primary caregiver. Typically, it is best to begin by explaining what *CogAT* measures and why it was given. Use the *Individual Profile Narrative* report in discussing the first four items on this list. The remaining items are questions that parents commonly ask. Focus on topics relevant to the student and be prepared to answer questions that arise during your parent-teacher discussion.

- **What does *CogAT* assess?** *CogAT* measures general thinking and problem-solving skills and indicates how well the student uses these skills to solve verbal, quantitative, and nonverbal problems. The profile of these abilities helps teachers better understand how different students learn best. The skills measured by *CogAT* develop gradually throughout a person's lifetime, but individuals vary in the rates at which they develop the skills. Experiences both in and out of school influence their development.

- **Why was the test given?** Based on your school's purpose for administering *CogAT*, indicate why the information from the test is important and how it will be used. Explain that the scores will be used to help the students learn more effectively. If there are additional reasons relevant to the student under discussion, state these as well.
- **What is the student's relative standing on each battery and the composite?** Include descriptive information about where the student stands in her or his age and grade groups as well as whether the individual's pattern of abilities is even or uneven. If uneven, identify the strengths and weaknesses in the profile. If the student's relative standings in the age and grade groups differ, point out the differences. If they are significant, explain how the age of the student in relation to her or his grade peers influences the differences and what they mean. (For information on the effect of a student's age on *CogAT* results, read about "Age Norms" and "Grade Norms" beginning on page 109.)
- **What is the purpose of the ability profile?** The ability profile assists teachers and counselors in locating specific instructional suggestions for helping the student learn based on the student's *CogAT* scores. The ability profile summarizes information about the level and pattern in each student's scores for the three batteries. As students change, so will their ability profiles.
- **What is the basis of comparison for these test scores?** In reporting relative standing, be sure to make clear that the student is being compared with a national representative sample of her or his age and grade peers. Sometimes parents think this comparison is based solely on the students who are in the same class. If local norms are also used, explain their use and significance. (See "Local Norms" on page 110.)
- **What is my child's IQ?** Explain that the type of score known as an "IQ" is no longer used in large-scale assessments and that *CogAT* does not give IQ scores. Emphasize that *CogAT* measures developed reasoning abilities that grow with activities in and out of school that challenge students to reason about their experiences. If this explanation is not sufficient, explain that, unlike specialized IQ tests, *CogAT* is normed only on that portion of the population that attends school and can take a group-administered test.
- **Is my child gifted?** State that there are many types of giftedness and that scores on *CogAT* are related to one type, namely, academic giftedness. Explain that giftedness in any area depends on many factors and that all of these cannot be determined by a single test. Further, students who excel in the primary grades often do not achieve such high rankings compared with classmates as they mature. The "gifted" label implies a permanence that often misleads. If the school has a program for academically talented students, answer this question in terms of the eligibility criteria for that program. Encourage parents to focus on the development of their child's interests and talents, not on whether the student is or is not gifted.
- **What do the *CogAT* scores indicate about the student's ability to learn?** If the student has below-average or very low scores on *CogAT*, explain that all individuals can learn, but they do not all learn at the same rate or in the same way. Emphasize any strengths the student displays. Discuss what is being done in school to help this individual learn. If the student has average or higher scores on *CogAT* and is doing very

poorly in school, explore possible reasons for the discrepancy and discuss what can be done both by the school and by the parents to help the student.

- **How can *CogAT* scores predict achievement in school?** Explain that predicted achievement levels reflect how students in the national sample who obtained similar scores on *CogAT* performed in school. Use broad ranges, such as above average or average, to designate the level of achievement. Indicate that these expected levels of achievement should be viewed as only one guideline for setting expectations of the student's progress in school. If parents indicate concern about their child's predicted level of achievement, address these concerns and be certain that parents understand what predicted achievement means. It should not be viewed as a permanent consignment to a particular level of achievement. Point out that factors such as effort, attention, attitudes, work habits, and support at home also influence school achievement.
- **How does the student's classroom performance compare with that of the predicted score?** Indicate whether the student's achievement in class is the same as, higher than, or lower than predicted. Explain how well the student uses her or his cognitive resources as well as other resources to learn. If the student's achievement is higher than predicted, comment favorably on it. If the achievement is lower than predicted, explore with parents the possible reasons and the steps that could be taken to improve it.
- **Why are scores on *CogAT* and the achievement test different?** Sometimes this question indicates that the parent is placing undue emphasis on small, insignificant differences between scores. For example, if a student has a percentile rank of 85 on the Verbal Battery and a percentile rank of 80 on the Reading section of a standardized achievement test (e.g., the *Iowa Assessments*), the difference is insignificant. Remind parents that the two tests measure different things, so scores should not be expected to be identical. Point out that although the two scores are not identical, they are consistent because (in this example) both indicate that the student is above average. Note that very high (or low) scores on one test are unlikely to be as high (or low) on the other test.
- **How can teachers, counselors, and parents work together to help the student become a more effective learner?** Discuss ways that parents can capitalize on their child's strengths while supervising homework, helping their child practice skills, or providing enrichment experiences. Some parents can use the suggestions for adapting instruction that are provided online for each *CogAT* ability profile. If there are community or school resources that would benefit the student, discuss available resources with parents.
- **Why are these *CogAT* scores different from those the student received earlier?** Individuals who assume that *CogAT* scores should be constant also assume that the test measures innate rather than developed abilities. Large changes in scores are not uncommon between kindergarten or grade 1 and grade 3 or 4. This reflects, in part, differences in the abilities that are measured by the tests that can be administered at each age. Score changes also reflect errors of measurement inherent in all assessment instruments and differences in the opportunities students have had to develop their

reasoning abilities. Students who come from advantaged backgrounds often show less advantage as other students catch up. For all of these reasons, students who receive very high scores on the first test they take are most likely to receive somewhat lower scores on the second test.

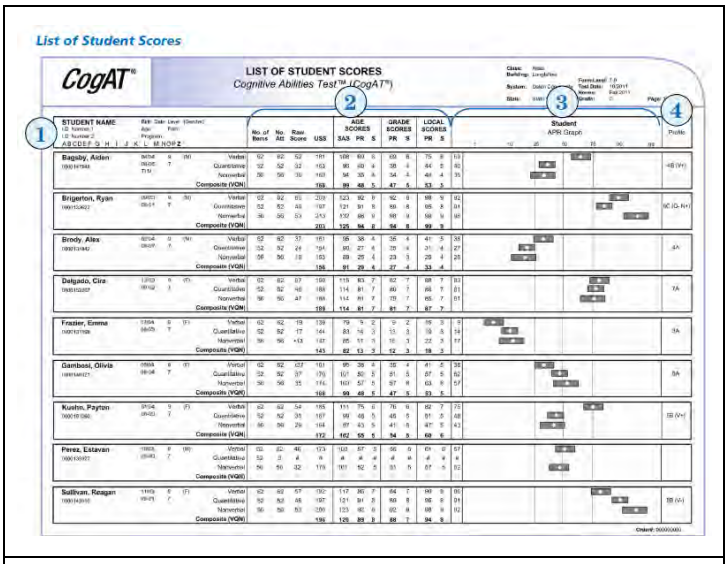
Appendix A Reading Score Reports

In Brief

This part of the guide contains samples of score reports for *CogAT*. To help you understand the reports you receive, each report sample is presented across two (or more) pages as follows:

Report Sample

Note: Data in these samples are for illustration purposes only.


List of Student Scores

CogAT®

LIST OF STUDENT SCORES
Cognitive Abilities Test™ (CogAT™)

1 2 3 4

STUDENT NAME | No. of Items | No. Att. | Raw Score | USS | AGE SCORES SAS PR S | GRADE SCORES PR S | LOCAL SCORES PR S | Student APR Graph | Profile

Bagsby, Aiden — Verbal / Quantitative / Nonverbal / Composite (VQN)
Brigerton, Ryan — Verbal / Quantitative / Nonverbal / Composite (VQN)
Brody, Alex — Verbal / Quantitative / Nonverbal / Composite (VQN)
Delgado, Cire — Verbal / Quantitative / Nonverbal / Composite (VQN)
Frazier, Emma — Verbal / Quantitative / Nonverbal / Composite (VQN)
Gamboni, Olivia — Verbal / Quantitative / Nonverbal / Composite (VQN)
Kuehn, Payton — Verbal / Quantitative / Nonverbal / Composite (VQN)
Perez, Estavan — Verbal / Quantitative / Nonverbal / Composite (VQN)
Sullivan, Reagan — Verbal / Quantitative / Nonverbal / Composite (VQN)

Description of the Report

- Purpose and Use
- Report Elements
- Sample Explained
- Factors to Consider – These questions identify factors that may cause your report contents to differ from the sample provided.

List of Student Scores—CogAT

Purpose and Use

This report provides *CogAT* scores of all students in a given class. Use it to:

- identify each student's areas of relative strengths and weaknesses
- review each student's test performance for each battery and overall in comparison with national or local norms
- review each student's ability profile
- compare students' performance within the class

Report Elements

The sample *List of Student Scores* shown on the previous page is one page of a multi-page report that provides:

① **Key to student information** – This box provides a key to the location and type of information provided for each student listed on this report. This information comes from coding on the student's answer document.

Student age information is an important factor in determining *CogAT* scores. "Program" refers to special groups or instructional activities to which a student may be assigned. The list of letters at the bottom of the box relates to supplemental codes your school or school system might have used to capture additional student information. If you used these codes, the data entered appear in each student's entry; however, that information is not used in calculating student scores.

② **Test results** – Column headings indicate the types of scores and data reported for each student.

③ **Ability Profile** – Graphical representation of the age percentile rank (APR) for each battery. The **confidence band** around each score represents the range in which the score is likely to fall if the student were tested again. Students' composite scores are **not** graphed so that the pattern formed by the battery score confidence bands is easy to identify. At the far right, each student's ability profile is noted. For more information, refer to "Understanding Ability Profiles" on page 13.

Sample Explained

This sample *List of Student Scores* is for Ms. Ness's third grade class at Longfellow School in the Dalen Community School System. The students were given *CogAT* Form 7 Level 9 in October 2011, and fall 2011 norms were used to convert raw scores to other score types.

The first student listed is Aiden Bagsby. His birth date is April 2004; his age was eight years and six months at the time of testing. He took *CogAT* Level 9 of Form 7 and he is a male. In the second row, Aiden's Student Identification Number is shown as 0000147548. Based on supplemental coding on Aiden's answer document, the third row shows that he is in a Title I Math (TI M) program.

The students in this class took all three batteries of *CogAT*. The first column to the right of Aiden's personal information lists the number of items in each of the batteries, the number of items Aiden answered, the number he answered correctly (raw scores), his universal scale score (USS) for each battery, and his composite score. The next column lists Aiden's standard age scores (SAS), age percentile ranks (PR), and age stanines (S), which show how he performed compared with other students who are the same age. The third column shows Aiden's grade percentile ranks (PR) and stanines (S), which compare his performance in each battery with that of other students in third grade. This school system elected to report scores based on local norms, which are listed in the fourth column. The large area to the right repeats Aiden's age percentile rank (APR) for each battery and shows a graph of each score. The graph includes a confidence band, presented as a gray area around each score. The column labeled "Ability Profile" presents Aiden's ability profile, **4B (V+)**, indicating Aiden received generally average scores with a relative strength on the Verbal Battery.

In order to interpret and act on the data in these reports, you must also understand the meaning of the various *CogAT* scores and norms. For that information, refer to "Appendix B: Understanding Scores and Norms," which begins on page 105.

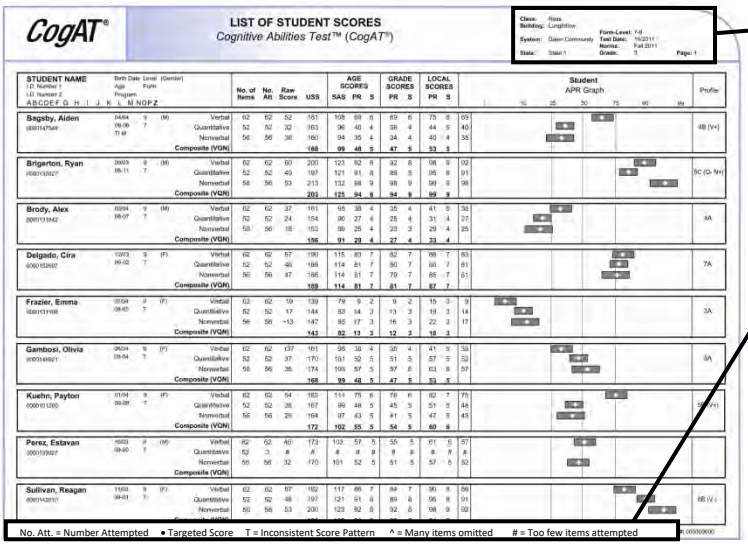
CogAT Form 7 Reports

The reports explained in this part of the guide are summarized below:

Report Title	Description of Report Contents	Page
List of Student Scores	Group listing of *CogAT* scores, by student – The group can be a class, a grade within a building, or a grade across the school system.	72
List of Student Scores – Iowa Assessments/ CogAT Combined	Group listing of *CogAT* and *Iowa Assessments* scores, by student – The group can be a class, a grade within a building, or a grade across the school system.	76
Group Summary	*CogAT* or *Iowa Assessments* and *CogAT* scores for a class (in this example); provided with the *List of Student Scores* – This report is also available with school- or school-system-level results.	80
Group List of Summaries	This lists more than one group summary per page; for example, a list of results from every fifth grade class in your school.	(*See Group Summary)*
Student Score Label	For each student – This reports the same data as found on the *List of Student Scores.*	82
Group List Ranked by Test	This ranks students from highest to lowest according to their age scores or grade scores for each *CogAT* battery and the composite. The group can be a class (ranking individual students), a grade within a building (ranking students at a particular grade level within the building), or a grade across the school system (ranking students at a particular grade level within the school system).	84
Individual Profile Narrative	For an individual student – *CogAT* test results are presented as numerical scores, in bar graphs, and in written, narrative form. An area on the report is reserved for a standardized message from the school or a teacher's comments.	86
Individual Profile Narrative – Iowa Assessments/CogAT *Combined*	For an individual student – *CogAT* and *Iowa Assessments* test results are presented as numerical scores, in bar graphs, and in written, narrative form.	90
Student Snapshot	For an individual student – A simplified presentation of *CogAT* test results, percentile rank scores, graphs of battery and composite scores, and a written narrative about the student's scores.	94
Class Snapshot	This summary of *CogAT* results for a class provides the class scores for each battery and the composite in numerical and graphical form and quantifies results by profile pattern and by strengths and weaknesses.	98
Building/System Snapshot	This summary of *CogAT* results for a building or school system provides the building/school system scores for each battery and the composite in numerical and graphical form and quantifies results by profile pattern and by strengths and weaknesses.	102

Identify Information in Score Reports

You will find the following information areas consistent across all *CogAT* score reports:



Report scope and test information – This area specifies whose test results are being reported, which test was given, and which norms were applied to the results.

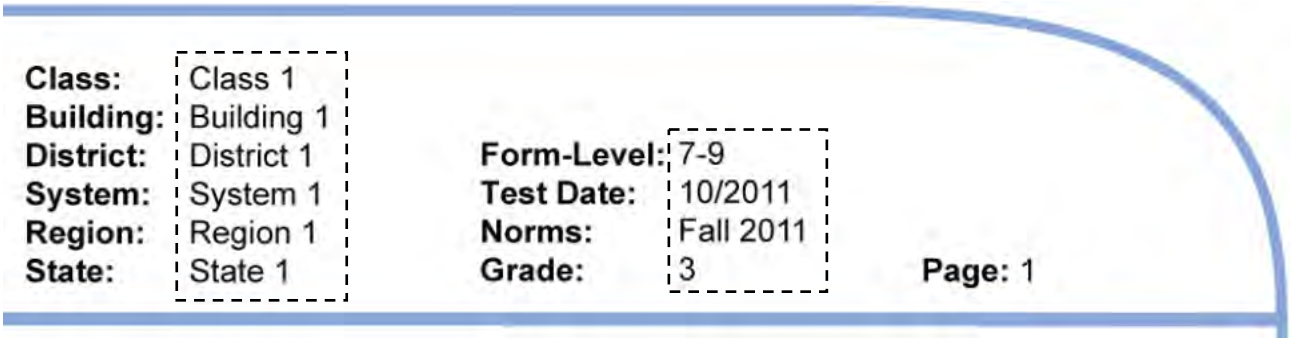
See examples below.

Report legend and special indicators – This area spells out abbreviations used in the report and identifies special indicators that may appear in place of or in addition to score data.

See "Report Legends: Score Warnings and Score Types" on page 70.

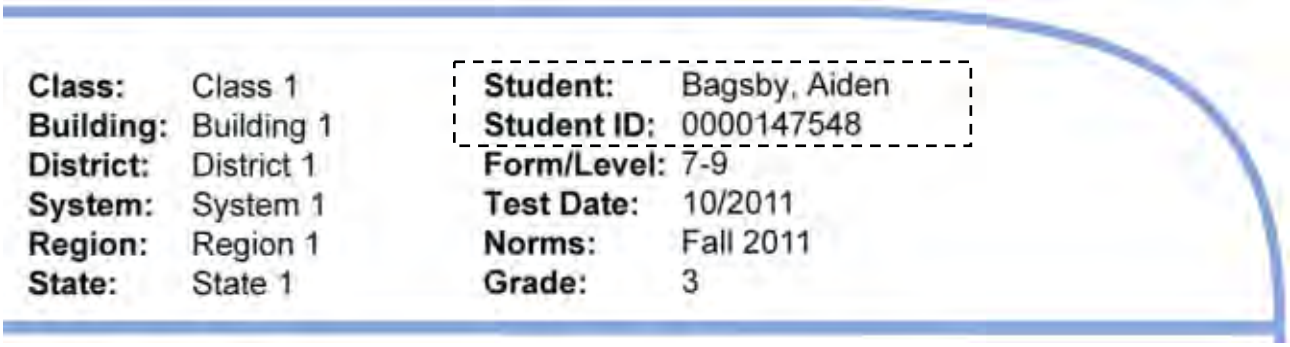
Report Scope and Test Information

If the report provides score information for a *group of students*, then the upper-right corner of the report provides the following information:



NOTE: Content in the outlined boxes will reflect the specifics of your test administration.

If the report provides score information for an *individual student*, then the upper-right corner of the report includes the student's name and identification (ID) number.



Report Legends: Score Warnings and Score Types

The legend at the bottom of many score reports identifies score warning symbols that may appear in the test score columns and spells out abbreviations used in the report.

Score Warnings

You may see the warning symbols explained below in your *CogAT* score reports.

\# **Too few items attempted –** Too few items were attempted to permit an estimation of a score on this battery and the complete composite.

If a student leaves many items blank on one or more batteries, it is likely that the student found the test too difficult or did not want to cooperate. This result is different from a score flagged as "many items omitted" (see description below).

o **Excluded from group averages by school request –** The student's scores are excluded from class, school, and school-system averages at the school's request.

<< **Age is out of range; age-based scores are not reported –** Either the student's age based on the indicated date of birth is outside the valid range to calculate age scores (4 years 11 months to 21 years 7 months) or no date of birth was indicated. This warning can also occur if the test date was missing or invalid.

~ **Estimated level –** Either the test level on the answer document was left blank or two different levels were coded and had to be estimated during scoring. In certain circumstances, this may indicate that the level was selected during scoring in order to correct for a coding error.

§ **Level unusual for coded grade –** The test level marked is unusual for the grade indicated. Double-check the accuracy of the grade and level information for the student. This may also indicate that the student was purposely tested off-level.

• **Targeted score –** The number of correct answers marked is at or below a chance level; the raw score could have been obtained by randomly marking answers to the test items.

‡ **Inconsistent response pattern –** The student's responses to items or subtests were inconsistent. For example, the student may have missed many easy items but correctly answered many of the more difficult items. Or, the student scored much lower on one of the subtests than on the other subtest(s) within the same battery. In either case, the error of measurement for the score on this battery is unusually large, so you should not use the score for making decisions about the student's abilities.

^ **Many items omitted –** The student omitted many items but answered 80 percent or more of the attempted items correctly.

This situation is likely due to a very slow but accurate response style. Reported scores may underestimate the student's level of cognitive development. If you examine the student's answer document, look for one of two common patterns of unanswered items. In one, unanswered questions are scattered throughout the subtests and across all batteries.

This pattern is typical of students who are unwilling to take risks and will not mark an answer unless they feel certain of the correct response. The other pattern of unanswered questions for students with 80 percent or more of their answered items correct occurs with *CogAT* Levels 9 through 17/18, which has time limits for each subtest. Students with this pattern work diligently to answer every item and run out of time. Students showing this pattern on all the subtests either work at a pace much slower than their age or grade peers or have not learned how to use a specified amount of time effectively to complete a task.

For students with either pattern of answer omission, consider their scores to be minimum estimates of their levels of cognitive skills.

a **Age unusual for coded level –** The student's age is unusual for the level of *CogAT* taken. Double-check the accuracy of the age and test level information for the student. This may also indicate that the student was purposely tested off-level.

Score Types and Norms

Refer to "Appendix B: Understanding Scores and Norms," beginning on page 105, for the following kinds of information:

- score types – abbreviations, definitions, and use
- norms – definitions and use

When reading score reports, the "Quick Reference Guide to Score Types and Norms" beginning on page 110 may be helpful.

Important Before you interpret scores and act on your findings, conduct a quick check of the report data. If you have not done so already, refer to the topic "Establish the Integrity of Your Score Information" on page 4.

List of Student Scores

CogAT®

LIST OF STUDENT SCORES

Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen C
State: State
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page:

1 2 3 4

STUDENT NAME / I.D. Number 1 / I.D. Number 2 / A B C D E F G H I J K L M N O P Z	Birth Date / Age / Program	Level / Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph (1 10 25 50 75 90 99)	Profile
Bagsby, Aiden	04/04	9	(M)	Verbal	62	62	52	181	108	69	6	69	6	75	6	69	4B (V+)
0000147548	08-06	7		Quantitative	52	52	32	163	96	40	4	38	4	44	5	40	
	TI M			Nonverbal	56	56	36	160	94	35	4	34	4	40	4	35	
				Composite (VQN)				**168**	**99**	**48**	**5**	**47**	**5**	**53**	**5**		
Brigerton, Ryan	09/03	9	(M)	Verbal	62	62	60	200	123	92	8	92	8	98	9	92	8C (Q- N+)
0000133627	08-11	7		Quantitative	52	52	49	197	121	91	8	89	8	95	8	91	
				Nonverbal	56	56	53	213	132	98	9	98	9	99	9	98	
				Composite (VQN)				**203**	**125**	**94**	**8**	**94**	**8**	**99**	**9**		
Brody, Alex	03/04	9	(M)	Verbal	62	62	37	161	95	38	4	35	4	41	5	38	4A
0000131842	08-07	7		Quantitative	52	52	24	154	90	27	4	25	4	31	4	27	
				Nonverbal	56	56	18	153	89	25	4	23	3	29	4	25	
				Composite (VQN)				**156**	**91**	**29**	**4**	**27**	**4**	**33**	**4**		
Delgado, Cira	12/03	9	(F)	Verbal	62	62	57	190	115	83	7	82	7	88	7	83	7A
0000152607	09-02	7		Quantitative	52	52	46	188	114	81	7	80	7	86	7	81	
				Nonverbal	56	56	47	188	114	81	7	79	7	85	7	81	
				Composite (VQN)				**189**	**114**	**81**	**7**	**81**	**7**	**87**	**7**		
Frazier, Emma	07/04	9	(F)	Verbal	62	62	19	139	79	9	2	9	2	15	3	9	3A
0000131198	08-03	7		Quantitative	52	52	17	144	83	14	3	13	3	19	3	14	
				Nonverbal	56	56	•13	147	85	17	3	16	3	22	3	17	
				Composite (VQN)				**143**	**82**	**13**	**3**	**12**	**3**	**18**	**3**		
Gambosi, Olivia	06/04	9	(F)	Verbal	62	62	t37	161	95	38	4	35	4	41	5	38	5A
0000146921	08-04	7		Quantitative	52	52	37	170	101	52	5	51	5	57	5	52	
				Nonverbal	56	56	35	174	103	57	5	57	6	63	6	57	
				Composite (VQN)				**168**	**99**	**48**	**5**	**47**	**5**	**53**	**5**		
Kuehn, Payton	01/04	9	(F)	Verbal	62	62	54	185	111	75	6	76	6	82	7	75	5B (V+)
0000151260	08-09	7		Quantitative	52	52	35	167	99	48	5	45	5	51	5	48	
				Nonverbal	56	56	26	164	97	43	5	41	5	47	5	43	
				Composite (VQN)				**172**	**102**	**55**	**5**	**54**	**5**	**60**	**6**		
Perez, Estavan	10/03	9	(M)	Verbal	62	62	46	173	103	57	5	55	5	61	6	57	
0000139927	09-00	7		Quantitative	52	3	#	#	#	#	#	#	#	#	#	#	
				Nonverbal	56	56	32	170	101	52	5	51	5	57	5	52	
				Composite (VQN)													
Sullivan, Reagan	11/03	9	(F)	Verbal	62	62	57	192	117	86	7	84	7	90	8	86	8B (V-)
0000142610	09-01	7		Quantitative	52	52	48	197	121	91	8	89	8	95	8	91	
				Nonverbal	56	56	53	200	123	92	8	92	8	98	9	92	
				Composite (VQN)				**196**	**120**	**89**	**8**	**88**	**7**	**94**	**8**		

Order#: 000000000

List of Student Scores

Purpose and Use

This report provides *CogAT* scores of all students in a given class. Use it to:

- identify each student's areas of relative strengths and weaknesses
- review each student's test performance for each battery and overall in comparison with national or local norms
- review each student's ability profile
- compare students' performance within the class

Report Elements

The sample *List of Student Scores* shown on the previous page is one page of a multi-page report that provides:

① **Key to student information –** This box provides a key to the location and type of information provided for each student listed on this report. This information comes from coding on the student's answer document.

Student age information is an important factor in determining *CogAT* scores. "Program" refers to special groups or instructional activities to which a student may be assigned. The list of letters at the bottom of the box relates to supplemental codes your school or school system might have used to capture additional student information. If you used these codes, the data entered appear in each student's entry; however, that information is not used in calculating student scores.

② **Test results –** Column headings indicate the types of scores and data reported for each student.

③ **Student APR graph –** Graphical representation of the age percentile rank (APR) for each battery. The **confidence band** around each score represents the range in which the score is likely to fall if the student were tested again. Student composite scores are **not** graphed so that the pattern formed by the battery score confidence bands is easy to identify.

④ **Ability profile –** The student's ability profile is listed. For more information, refer to "Understanding Ability Profiles" on page 12.

Sample Explained

This sample *List of Student Scores* is for Ms. Ness' third grade class at Longfellow School in the Dalen Community School System. The students were given *CogAT* Form 7 Level 9 in October 2011, and fall 2011 norms were used to convert raw scores to other score types.

The first student listed is Aiden Bagsby. His birth date is April 2004; his age was eight years and six months at the time of testing. He took *CogAT* Level 9 of Form 7 and he is a male. In the second row, Aiden's Student Identification Number is shown as 0000147548. Based on supplemental coding on Aiden's answer document, the third row shows that he is in a Title I Math (TI M) program.

The students in this class took all three batteries of *CogAT*. The first column to the right of Aiden's personal information lists the number of items in each of the batteries, the number of items Aiden answered, the number he answered correctly (raw score), his universal scale score (USS) for each battery, and his composite score. The next column lists Aiden's standard age scores (SAS), age percentile ranks (PR), and age stanines (S), which show how he performed compared with other students who are the same age. The third column shows Aiden's grade percentile ranks (PR) and stanines (S), which compare his performance in each battery with that of other students in third grade. This school system elected to report scores based on local norms, which are listed in the fourth column.

Continued on next page…

List of Student Scores, continued

CogAT®

LIST OF STUDENT SCORES

Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen C
State: State
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page:

1 2 3 4

STUDENT NAME / I.D. Number 1 / I.D. Number 2 / A B C D E F G H I J K L M N O P Z	Birth Date / Age / Program	Level / Form	(Gender)		No. of Items	No. Att	Raw Score	USS	AGE SCORES SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	LOCAL SCORES PR	LOCAL SCORES S	Student APR Graph	Profile
Bagsby, Aiden	04/04	9	(M)	Verbal	62	62	52	181	108	69	6	69	6	75	6	69	
0000147548	08-06	7		Quantitative	52	52	32	163	96	40	4	38	4	44	5	40	4B (V+)
	TI M			Nonverbal	56	56	36	160	94	35	4	34	4	40	4	35	
				Composite (VQN)				**168**	**99**	**48**	**5**	**47**	**5**	**53**	**5**		
Brigerton, Ryan	09/03	9	(M)	Verbal	62	62	60	200	123	92	8	92	8	98	9	92	
0000133627	08-11	7		Quantitative	52	52	49	197	121	91	8	89	8	95	8	91	8C (Q- N+)
				Nonverbal	56	56	53	213	132	98	9	98	9	99	9	98	
				Composite (VQN)				**203**	**125**	**94**	**8**	**94**	**8**	**99**	**9**		
Brody, Alex	03/04	9	(M)	Verbal	62	62	37	161	95	38	4	35	4	41	5	38	
0000131842	08-07	7		Quantitative	52	52	24	154	90	27	4	25	4	31	4	27	4A
				Nonverbal	56	56	18	153	89	25	4	23	3	29	4	25	
				Composite (VQN)				**156**	**91**	**29**	**4**	**27**	**4**	**33**	**4**		
Delgado, Cira	12/03	9	(F)	Verbal	62	62	57	190	115	83	7	82	7	88	7	83	
0000152607	09-02	7		Quantitative	52	52	46	188	114	81	7	80	7	86	7	81	7A
				Nonverbal	56	56	47	188	114	81	7	79	7	85	7	81	
				Composite (VQN)				**189**	**114**	**81**	**7**	**81**	**7**	**87**	**7**		
Frazier, Emma	07/04	9	(F)	Verbal	62	62	19	139	79	9	2	9	2	15	3	9	
0000131198	08-03	7		Quantitative	52	52	17	144	83	14	3	13	3	19	3	14	3A
				Nonverbal	56	56	•13	147	85	17	3	16	3	22	3	17	
				Composite (VQN)				**143**	**82**	**13**	**3**	**12**	**3**	**18**	**3**		
Gambosi, Olivia	06/04	9	(F)	Verbal	62	62	t37	161	95	38	4	35	4	41	5	38	
0000146921	08-04	7		Quantitative	52	52	37	170	101	52	5	51	5	57	5	52	5A
				Nonverbal	56	56	35	174	103	57	5	57	6	63	6	57	
				Composite (VQN)				**168**	**99**	**48**	**5**	**47**	**5**	**53**	**5**		
Kuehn, Payton	01/04	9	(F)	Verbal	62	62	54	185	111	75	6	76	6	82	7	75	
0000151260	08-09	7		Quantitative	52	52	35	167	99	48	5	45	5	51	5	48	5B (V+)
				Nonverbal	56	56	26	164	97	43	5	41	5	47	5	43	
				Composite (VQN)				**172**	**102**	**55**	**5**	**54**	**5**	**60**	**6**		
Perez, Estavan	10/03	9	(M)	Verbal	62	62	46	173	103	57	5	55	5	61	6	57	
0000139927	09-00	7		Quantitative	52	3	#	#	#	#	#	#	#	#	#	#	
				Nonverbal	56	56	32	170	101	52	5	51	5	57	5	52	
				Composite (VQN)													
Sullivan, Reagan	11/03	9	(F)	Verbal	62	62	57	192	117	86	7	84	7	90	8	86	
0000142610	09-01	7		Quantitative	52	52	48	197	121	91	8	89	8	95	8	91	8B (V-)
				Nonverbal	56	56	53	200	123	92	8	92	8	98	9	92	
				Composite (VQN)				**196**	**120**	**89**	**8**	**88**	**7**	**94**	**8**		

Order#: 000000000

List of Student Scores, continued

Sample Explained, *continued*	The large area to the right repeats Aiden's age percentile rank (APR) for each battery and shows a graph of each score. The graph includes a confidence band, presented as a gray area around each score. The column labeled **Profile** presents Aiden's ability profile, **4B (V+)**, indicating Aiden received generally average scores with a relative strength on the Verbal Battery. Emma Frazier's score on the Nonverbal Battery is marked as a targeted score because she could have received this low score by randomly marking responses. Olivia Gambosi's score on the Verbal Battery indicates that her responses on that test were inconsistent. Estavan Perez did not answer enough questions on the Quantitative Battery to allow calculation of a score, but he did answer a few questions. The absence of a quantitative score for Estavan also explains the absence of a composite score and an ability profile for him.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • Did your students take the *Iowa Assessments* at the same time as *CogAT*? Did your school request combined results from the *Iowa Assessments* and *CogAT*? If so, refer to the *List of Student Scores – Iowa Assessments/CogAT* Combined on page 76. • Did your school request local norms, as shown in the sample? Local norms are a reporting option. • What supplemental coding did your school assign and apply to the answer documents?

List of Student Scores – Iowa Assessments/CogAT Combined

Iowa Assessments™

LIST OF STUDENT SCORES

Iowa Assessments™/CogAT®

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: E-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 1

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STUDENT NAME / I.D. Number 1 / I.D. Number 2	Birth Date / Age / Program	Level	(Gender)	Calculator / Form / A B C D E F G H I J K L M N O P Z		ENGLISH LANGUAGE ARTS								MATHEMATICS			CORE COMPOSITE	Social Studies	Science	COMP. COMPOSITE
						Reading	Written Expression	Conven. of Writing	Vocabulary	ELA TOTAL	Word Analysis	Listening	EXT. ELA TOTAL	Mathematics	Computation	MATH TOTAL				
Brigerton, Ryan	09/03 / 08-11	9	(M)		SS	214	201	203	210	207	223	218	221	205	206	206	207	223	205	210
0000133627		E			PSS	212	198	201	199	205	207	216	218	200	201	200	203	211	201	208
					SSDiff				+11		+16							+12		
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score	AGE SCORES SAS / PR / S		GRADE SCORES PR / S	NPR	97	90	92	96	94	99	98	98	93	94	94	94	99	93	96
					PNPR	96	87	90	88	93	94	97	98	89	90	89	92	96	90	95
					NPRDiff				+8		+5							+4		
Verbal	62 62 60	123 92 8		92 8	GE	5.8	4.9	5.0	5.5	5.3	6.5	6.1	6.3	5.2	5.2	5.2	5.3	6.5	5.2	5.5
Quantitative	52 52 49	121 91 8		89 8	PGE	5.7	4.6	4.9	4.7	5.2	5.3	6.0	6.1	4.8	4.9	4.8	5.0	5.6	4.9	5.4
Nonverbal	56 56 53	132 98 9		98 9	GEDIFF				+0.8		+1.2							+0.9		
Composite (VQN)		**125 94 8**		**94 8**	NS	9	8	8	9	8	9	9	9	8	8	8	8	9	8	9
Ability Profile	8C(Q- N+)																			
Frazier, Emma	07/04 / 08-03 / RTI Math	9	(F)		SS	#	130	130	141		143	144		125	130	128		141	133	
0000131198		E			PSS	#	135	135	146		149	149		132	135	133		146	137	
					SSDiff	#			-5		-6	-5		-7	-5	-5		-5	-4	
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score	AGE SCORES SAS / PR / S		GRADE SCORES PR / S	NPR	#	2	2	6		7	8		1	2	1		6	3	
					PNPR	#	3	3	8		10	10		2	3	3		8	4	
					NPRDiff	#			-2		-3	-2		-1	-1	-2		-2	-1	
Verbal	62 62 19	79 9 2		9 2	GE	#	K.8	K.8	1.4		1.5	1.5		K.5	K.8	K.6		1.4	K.9	
Quantitative	52 52 17	83 14 13		13 3	PGE	#	1.0	1.0	1.6		1.8	1.8		K.9	1.0	K.9		1.6	1.2	
Nonverbal	56 56 •13	85 17 13		16 3	GEDIFF	#			-0.2		-0.3	-0.3		-0.4	-0.2	-0.3		-0.2	-0.3	
Composite (VQN)		**82 13 3**		**12 3**	NS	#	1	1	2		2	2		1	1	1		2	1	
Ability Profile	3A																			
Kuehn, Payton	01/04 / 08-09	10	(F)		SS	188	182	184	187	185	187	188	188	168	162	165	175	173	175	175
0000151260		E			PSS	190	195	193	192	203	191	190	191	176	178	178	179	176	183	183
					SSDiff		-13								-16	-13				-8
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score	AGE SCORES SAS / PR / S		GRADE SCORES PR / S	NPR	74	63	67	71	68	72	74	73	35	26	30	50	46	51	50
					PNPR	76	83	81	80	92	78	76	78	52	56	56	58	52	65	65
					NPRDiff		-20								-30	-26			-14	-15
Verbal	62 62 54	111 75 6		76 6	GE	4.0	3.6	3.7	3.9	3.8	3.9	4.0	4.0	2.8	2.4	2.6	3.2	3.1	3.2	3.2
Quantitative	52 52 35	99 48 5		45 5	PGE	4.1	4.4	4.3	4.2	5.0	4.2	4.1	4.2	3.2	3.4	3.4	3.5	3.2	3.7	3.7
Nonverbal	56 56 26	97 43 5		41 5	GEDIFF		-0.8			-1.2	-0.3	-0.1			-1.0	-0.8				-0.5
Composite (VQN)		**102 55 5**		**54 5**	NS	6	6	6	6	6	6	6	6	4	4	4	5	5	5	5
Ability Profile	5B(V+)																			
Perez, Estavan	10/03 / 09-00	9	(M)		SS	174	175	174	177	175	181	186	184	181	178	180	178	188	163	177
0000139927		E			PSS	181	179	182	177	180	187	201	195	192	179	181	179	200	193	180
					SSDiff	-7		-8		-5		-15	-11	-9				-12	-30	
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score	AGE SCORES SAS / PR / S		GRADE SCORES PR / S	NPR	48	51	47	55	50	61	70	66	61	57	59	56	73	28	54
					PNPR	61	58	63	54	59	71	90	83	80	58	61	58	89	81	59
					NPRDiff	-13		-16		-9	-10	-20	-17	-19				-16	-53	
Verbal	62 62 46	103 57 5		55 5	GE	3.1	3.2	3.1	3.3	3.2	3.6	3.9	3.7	3.6	3.4	3.5	3.4	4.0	2.5	3.3
Quantitative	52 3 #	# # #		# #	PGE	3.6	3.5	3.6	3.3	3.5	3.9	4.9	4.4	4.2	3.5	3.6	3.5	4.8	4.3	3.5
Nonverbal	56 56 32	101 52 5		51 5	GEDIFF	-0.5		-0.5		-0.3		-1.0	-0.7	-0.6				-0.8	-1.8	
Composite (VQN)					NS	5	5	5	5	5	6	6	6	6	5	5	5	6	4	5
Ability Profile																				

Only the top and bottom N% of differences are printed.

Order#: 000000000

List of Student Scores – Iowa Assessments/CogAT Combined

Purpose and Use

This report provides the *Iowa Assessments* and *CogAT* scores of all students in a given class. Use it to:

- identify individual students' relative strengths and weaknesses
- review each student's overall test performance for each *CogAT* battery as well as *Iowa Assessments* tests in comparison with national or local norms
- review each student's ability profile
- compare each student's predicted and actual *Iowa Assessments* scores
- compare achievement scores with ability scores
- compare students' performance within the class

Report Elements

The sample *List of Student Scores* report shown on the previous page is one page of a multi-page report that provides:

① **Key to student information –** This box provides a key to the location and type of information provided for each student listed on this report. This information comes from coding on the student's answer document.

Student age information is an important factor in determining *CogAT* scores. "Program" refers to special groups or instructional activities to which a student may be assigned. The list of letters at the bottom of the box relates to supplemental codes your school or school system might have used to capture additional student information. If you used these codes, the data entered appear in each student's entry; however, that information is not used in calculating student scores.

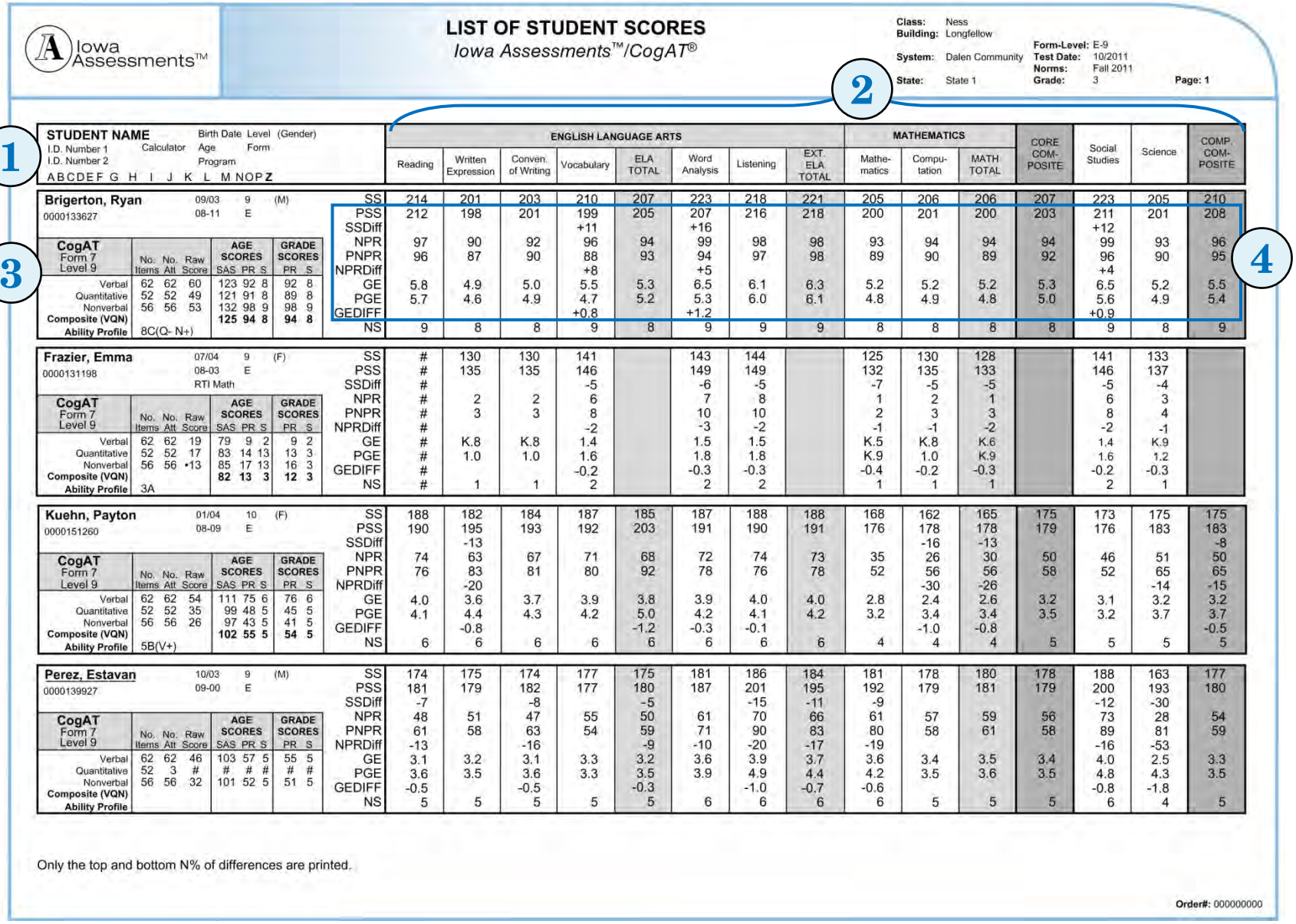
② **Names of the *Iowa Assessments* tests and student scores –** Individual student scores are listed below the name of each test in the *Iowa Assessments.* For more information about using these scores, refer to the *Iowa Assessments Score Interpretation Guide*.

③ ***CogAT* scores –** In the box under each student's name, *CogAT* scores and information are presented. The form and level are listed at the top of the left column. The second column shows the number of questions on each of the three batteries together with the number the student attempted and the raw score for each battery. The next column shows the standard age scores (SAS), national percentile ranks (PR), and national stanines (S) for each battery and the composite. These scores are based on the student's age at the time of *CogAT* testing. The fourth column provides the student's national percentile ranks and stanines for each battery and the composite, based on *CogAT* grade norms. The student's ability profile is in the bottom left portion of the box.

④ **Predicted and difference scores –** Unique to *Iowa Assessments/CogAT* combined reports, the predicted and difference scores are based on the student's *CogAT* scores. The predicted and difference scores appear below the student's related *Iowa Assessments* score.

Continued on next page…

List of Student Scores – Iowa Assessments/CogAT Combined, continued



Iowa Assessments™

LIST OF STUDENT SCORES

Iowa Assessments™/CogAT®

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: E-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 1

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2

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4

STUDENT NAME / I.D. Number 1 / I.D. Number 2	Birth Date / Age / Calculator / Program / Level / Form / (Gender)		ENGLISH LANGUAGE ARTS								MATHEMATICS			CORE COMPOSITE	Social Studies	Science	COMP. COMPOSITE
			Reading	Written Expression	Conven. of Writing	Vocabulary	ELA TOTAL	Word Analysis	Listening	EXT. ELA TOTAL	Mathematics	Computation	MATH TOTAL				
Brigerton, Ryan	09/03 9 (M)	SS	214	201	203	210	207	223	218	221	205	206	206	207	223	205	210
0000133627	08-11 E	PSS	212	198	201	199	205	207	216	218	200	201	200	203	211	201	208
		SSDiff				+11		+16							+12		
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score / AGE SCORES SAS PR S / GRADE SCORES PR S	NPR	97	90	92	96	94	99	98	98	93	94	94	94	99	93	96
Verbal	62 62 60 / 123 92 8 / 92 8	PNPR	96	87	90	88	93	94	97	98	89	90	89	92	96	90	95
Quantitative	52 52 49 / 121 91 8 / 89 8	NPRDiff				+8		+5							+4		
Nonverbal	56 56 53 / 132 98 9 / 98 9	GE	5.8	4.9	5.0	5.5	5.3	6.5	6.1	6.3	5.2	5.2	5.2	5.3	6.5	5.2	5.5
Composite (VQN)	**125 94 8** / **94 8**	PGE	5.7	4.6	4.9	4.7	5.2	5.3	6.0	6.1	4.8	4.9	4.8	5.0	5.6	4.9	5.4
Ability Profile 8C(Q- N+)		GEDIFF				+0.8		+1.2							+0.9		
		NS	9	8	8	9	8	9	9	9	8	8	8	8	9	8	9
Frazier, Emma	07/04 9 (F)	SS	#	130	130	141		143	144		125	130	128		141	133	
0000131198	08-03 E RTI Math	PSS	#	135	135	146		149	149		132	135	133		146	137	
		SSDiff	#			-5		-6	-5		-7	-5	-5		-5	-4	
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score / AGE SCORES SAS PR S / GRADE SCORES PR S	NPR	#	2	2	6		7	8		1	2	1		6	3	
Verbal	62 62 19 / 79 9 2 / 9 2	PNPR	#	3	3	8		10	10		2	3	3		8	4	
Quantitative	52 52 17 / 83 14 13 / 13 3	NPRDiff	#			-2		-3	-2		-1	-1	-2		-2	-1	
Nonverbal	56 56 •13 / 85 17 13 / 16 3	GE	#	K.8	K.8	1.4		1.5	1.5		K.5	K.8	K.6		1.4	K.9	
Composite (VQN)	**82 13 3** / **12 3**	PGE	#	1.0	1.0	1.6		1.8	1.8		K.9	1.0	K.9		1.6	1.2	
Ability Profile 3A		GEDIFF	#			-0.2		-0.3	-0.3		-0.4	-0.2	-0.3		-0.2	-0.3	
		NS	#	1	1	2		2	2		1	1	1		2	1	
Kuehn, Payton	01/04 10 (F)	SS	188	182	184	187	185	187	188	188	168	162	165	175	173	175	175
0000151260	08-09 E	PSS	190	195	193	192	203	191	190	191	176	178	178	179	176	183	183
		SSDiff		-13								-16	-13				-8
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score / AGE SCORES SAS PR S / GRADE SCORES PR S	NPR	74	63	67	71	68	72	74	73	35	26	30	50	46	51	50
Verbal	62 62 54 / 111 75 6 / 76 6	PNPR	76	83	81	80	92	78	76	78	52	56	56	58	52	65	65
Quantitative	52 52 35 / 99 48 5 / 45 5	NPRDiff		-20								-30	-26			-14	-15
Nonverbal	56 56 26 / 97 43 5 / 41 5	GE	4.0	3.6	3.7	3.9	3.8	3.9	4.0	4.0	2.8	2.4	2.6	3.2	3.1	3.2	3.2
Composite (VQN)	**102 55 5** / **54 5**	PGE	4.1	4.4	4.3	4.2	5.0	4.2	4.1	4.2	3.2	3.4	3.4	3.5	3.2	3.7	3.7
Ability Profile 5B(V+)		GEDIFF		-0.8			-1.2	-0.3	-0.1			-1.0	-0.8				-0.5
		NS	6	6	6	6	6	6	6	6	4	4	4	5	5	5	5
Perez, Estavan	10/03 9 (M)	SS	174	175	174	177	175	181	186	184	181	178	180	178	188	163	177
0000139927	09-00 E	PSS	181	179	182	177	180	187	201	195	192	179	181	179	200	193	180
		SSDiff	-7		-8		-5		-15	-11	-9				-12	-30	
CogAT Form 7 Level 9	No. Items / No. Att / Raw Score / AGE SCORES SAS PR S / GRADE SCORES PR S	NPR	48	51	47	55	50	61	70	66	61	57	59	56	73	28	54
Verbal	62 62 46 / 103 57 5 / 55 5	PNPR	61	58	63	54	59	71	90	83	80	58	61	58	89	81	59
Quantitative	52 3 # / # # # / # #	NPRDiff	-13		-16		-9	-10	-20	-17	-19				-16	-53	
Nonverbal	56 56 32 / 101 52 5 / 51 5	GE	3.1	3.2	3.1	3.3	3.2	3.6	3.9	3.7	3.6	3.4	3.5	3.4	4.0	2.5	3.3
Composite (VQN)		PGE	3.6	3.5	3.6	3.3	3.5	3.9	4.9	4.4	4.2	3.5	3.6	3.5	4.8	4.3	3.5
Ability Profile		GEDIFF	-0.5		-0.5		-0.3		-1.0	-0.7	-0.6				-0.8	-1.8	
		NS	5	5	5	5	5	6	6	6	6	5	5	5	6	4	5

Only the top and bottom N% of differences are printed.

Order#: 000000000

List of Student Scores – Iowa Assessments/CogAT Combined, *continued*

Sample Explained	This sample *List of Student Scores* is for Ms. Ness' third grade class at Longfellow School in the Dalen Community School System. The students were given *CogAT* and the *Iowa Assessments* in October 2011, and fall 2011 norms were used to convert raw scores to other score types. The first student listed is Ryan Brigerton. His birth date is September 2003; he is male. In the second row, Ryan's Student Identification Number is shown as 0000133627; his age at the time of testing was eight years and eleven months. His *CogAT* information shows that he took Form 7, Level 9. His ability profile is **8C (Q- N+)**, indicating that he has generally above-average scores with a relatively higher score in nonverbal (spatial) reasoning and a relatively lower score in quantitative reasoning. For the *Iowa Assessments*, the school elected to include these scores on the report: standard score (SS), predicted standard score (PSS), difference between SS and PSS (SSDiff), national percentile rank (NPR), predicted national percentile rank (PNPR), difference between NPR and PNPR (NPRDiff), grade equivalent (GE), predicted grade equivalent (PGE), difference between GE and PGE (GEDIFF), and national stanine (NS). Ryan scored higher on the Vocabulary, Word Analysis, and Social Studies tests than his *CogAT* scores predicted. Emma Frazier's score on the Nonverbal Battery of *CogAT* is marked as a targeted score because she could have received this low score by randomly marking responses. Her ability profile is **3A**, indicating that she has generally below-average scores on all three batteries. She did not answer enough questions on the Reading test to allow calculation of a score. This explains the absence of ELA total, extended ELA total, and composite scores for Emma. She scored lower in the Vocabulary, Word Analysis, Listening, Mathematics, Computation, Social Studies, and Science tests than her *CogAT* scores predicted.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • What test scores did your school order? Local norms are optional. • Which DIFF score suppression option did your school order? The option selected and the number of students with DIFF scores outside the suppression range determine how many DIFF scores you see on your report. • Is the *CogAT* score box mostly blank with a single *CogAT* score under the student's name? The report contains detailed information about *CogAT* performance only when *CogAT* scoring is done concurrently with *Iowa Assessments* scoring and combined score reporting has been ordered.

Group Summary – Class Sample

CogAT®

CLASS SUMMARY

Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 1

2

		Number of Students Included	Average USS	AGE SCORES Average SAS	AGE SCORES PR	AGE SCORES S	GRADE SCORES PR	GRADE SCORES S	APR of Class Average Graph
									1 25 50 75 99
Ness	Verbal	10	172.8	103.0	57	5	54	5	57
	Quantitative	9	170.2	101.4	53	5	50	5	53
	Nonverbal	10	171.8	102.4	56	5	52	5	56
Number of Students Tested = 10	**Composite (VQN)**	**9**	**171.6**	**101.9**	**55**	**5**	**52**	**5**	**55**

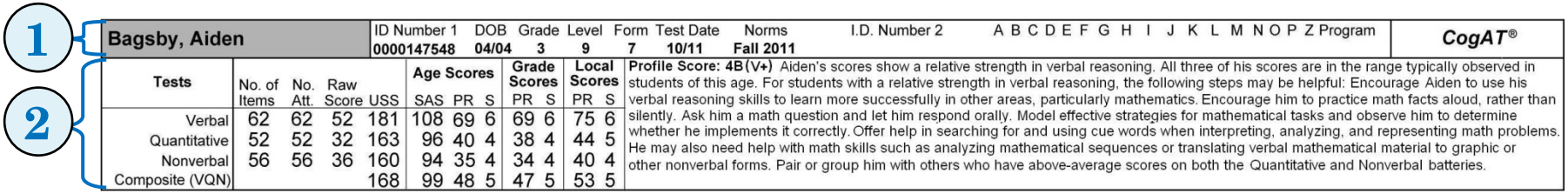
1

3

Group Summary – Class Sample

Purpose and Use	This report appears as the last page of the *List of Student Scores* report. Use it to review summary data for the class and to see the class average *CogAT* scores for each battery and the composite. **Note:** This report can also be provided at the school and school-system levels. In addition, a similar report called the *Group List of Summaries* can be ordered at the school, school system, or state levels. That report presents summary information for multiple classes (in the school report), schools (in the school system report), or school systems (in the state report) on a single page, allowing administrators to easily review and compare group performance.
Report Elements	The sample *Class Summary* of *CogAT* scores shown on the previous page is a one-page report that provides: ① **Names of the *CogAT* batteries –** This area lists the name of the teacher, total number of students tested, and the three *CogAT* batteries. ② **Scores reported –** This area provides information about the class averages of the scores reported for the students included on the *List of Student Scores*. ③ **Graph of class APRs –** The column of scores immediately to the left of the graph repeats the age percentile rank (APR) scores shown in the Age Scores area of the report. The graph plots the class APR for each battery and the class composite score.
Sample Explained	This sample *Class Summary* is for Ms. Ness' third grade class at Longfellow School in the Dalen Community School System. The students were given *CogAT* Form 7 in October 2011, and fall 2011 norms were used to convert raw scores to other score types. This *Class Summary* appears at the end of the *List of Student Scores* for Ms. Ness' class, shown on page 72. The first column shows that ten students took *CogAT*, but only nine completed all the Quantitative Battery and received a composite score. The next column lists the average universal scale score (USS) for the class for each battery and the composite. The third column lists the class' average standard age scores (SAS), which is used to determine age percentile ranks (PR), and age stanines (S). These scores show how the class performed compared with the national norm group. The fourth column shows the grade percentile ranks (PR) and stanines (S) associated with the average USS scores for the class, which compare the performance on each battery and the composite with that of other students in third grade. The large area to the right lists the age percentile rank (APR) associated with the class' average standard age score and includes a graph of that score for each battery.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • What test scores did your school request? Local norms are an option. • Did your school request combined results from the *Iowa Assessments* and *CogAT*? If so, the *Iowa Assessments* information and scores will appear at the top of the report. For information on scores from the *Iowa Assessments*, refer to the *Iowa Assessments Score Interpretation Guide*.

Student Score Label



Bagsby, Aiden	ID Number 1	DOB	Grade	Level	Form	Test Date	Norms	I.D. Number 2	A B C D E F G H I J K L M N O P Z Program	CogAT®
	0000147548	04/04	3	9	7	10/11	Fall 2011			

Tests	No. of Items	No. Att.	Raw Score	USS	Age Scores SAS	PR	S	Grade Scores PR	S	Local Scores PR	S
Verbal	62	62	52	181	108	69	6	69	6	75	6
Quantitative	52	52	32	163	96	40	4	38	4	44	5
Nonverbal	56	56	36	160	94	35	4	34	4	40	4
Composite (VQN)				168	99	48	5	47	5	53	5

Profile Score: 4B(V+) Aiden's scores show a relative strength in verbal reasoning. All three of his scores are in the range typically observed in students of this age. For students with a relative strength in verbal reasoning, the following steps may be helpful: Encourage Aiden to use his verbal reasoning skills to learn more successfully in other areas, particularly mathematics. Encourage him to practice math facts aloud, rather than silently. Ask him a math question and let him respond orally. Model effective strategies for mathematical tasks and observe him to determine whether he implements it correctly. Offer help in searching for and using cue words when interpreting, analyzing, and representing math problems. He may also need help with math skills such as analyzing mathematical sequences or translating verbal mathematical material to graphic or other nonverbal forms. Pair or group him with others who have above-average scores on both the Quantitative and Nonverbal batteries.

Purpose and Use

This self-stick label provides *CogAT* scores for an individual student. Several labels are printed on a single page; each can be peeled off and placed in individual files. Use score labels in a file folder to create a cumulative record of test scores and monitor progress across years. Note: A combined *Iowa Assessments*/*CogAT* score label is also available.

Report Elements

The sample *Student Score Label* shown above provides:

① **Student, test, norms, and supplemental coding information –** The top row lists the student's name, ID number, and date of birth as well as the grade, test level, test form, and test date for the *CogAT* administration. The norms used to calculate scores are listed. Any supplemental codes and programs captured on the answer document are listed in this row.

② **Test batteries and student scores –** The test scores on the *Student Score Label* are the same as those reported on the *List of Student Scores*. The student's ability profile and a narrative about it appear to the right of the numerical scores.

When combined *Iowa Assessments*/*CogAT* reporting is ordered, this label can also include predicted grade equivalents and differences between actual and predicted grade equivalents; predicted standard scores and differences between actual and predicted standard scores; predicted national stanines; and predicted national percentile ranks.

Sample Explained

This sample label is for Aiden Bagsby; it contains the same demographic and score information as appears for him on the *List of Student Scores* (see page 72). The narrative provides more information about his ability profile, including suggestions for instructional activities that build on his strengths and shore up his weaknesses.

Factors to Consider

Compare your *Student Score Label* with the sample. To help identify reasons for differences between them, answer the following questions:

- What supplemental coding did your school assign and apply to the answer documents?
- Did your school request local norms, as shown in the sample? Local norms are a reporting option.
- Did your students take the *Iowa Assessments* at the same time as *CogAT*? If so, there will also be *Iowa Assessments* information and scores on the label. Refer to the *List of Student Scores – Iowa Assessments*/*CogAT* Combined report on page 76 for help reading both sets of data.

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Group List Ranked by Test – Class Sample

CogAT®

CLASS LIST RANKED BY TEST

Cognitive Abilities Test™ (CogAT®)

Class: Greenwood
Building: Longfellow
System: Open Community
State: State 1
Form-Level: 7-10
Test Date: 10/2012
Months: Fall 2011
Grade: 4
Page: 1

1 2

Verbal	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name
	123	92	8	Kelly, Roary	114	81	7	Mayo, Patricia	103	57	6	Dawson, Felix	79	9	2	Kennedy, Kim
	119	88	8	Guerrero, Hope	111	75	6	Fulton, Imani	102	55	6	Murphy, Maggy				
	114	81	7	Murray, Kellie	108	69	6	Donovan, Cyrus	95	38	4	Potter, Lucas				

Quantitative	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name
	121	91	8	Murray, Kellie	104	60	5	Guerrero, Hope	94	35	4	Murphy, Maggy				
	121	91	8	Mayo, Patricia	99	48	5	Fulton, Imani	90	27	4	Potter, Lucas				
	116	84	7	Kelly, Roary	96	40	4	Donovan, Cyrus	83	14	3	Kennedy, Kim				

Nonverbal	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name
	132	98	9	Guerrero, Hope	106	69	6	Murray, Kellie	97	43	5	Fulton, Imani	85	17	3	Kennedy, Kim
	123	92	9	Mayo, Patricia	101	62	5	Dawson, Felix	94	35	4	Donovan, Cyrus				
	114	81	7	Kelly, Roary	99	48	5	Murphy, Maggy	89	25	4	Potter, Lucas				

Composite (VQN)	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name	SAS	APR	AS	Student Name
	119	88	7	Mayo, Patricia	114	81	7	Murray, Kellie	97	43	5	Murphy, Maggy				
	118	87	7	Guerrero, Hope	102	55	6	Fulton, Imani	91	29	4	Potter, Lucas				
	118	87	7	Kelly, Roary	99	48	5	Donovan, Cyrus	82	13	3	Kennedy, Kim				

Group List Ranked by Test – Class Sample

Purpose and Use	This report provides *CogAT* scores ranked from highest to lowest for a class (as shown in the example on the previous page), for a building, or for a school system. Use it to: • identify students in the group who obtained the highest (or lowest) scores on each of the three batteries for instructional planning (e.g., participation in a talent development program) • determine the range of individual differences in cognitive development among the students in the group
Report Elements	The sample *Group List Ranked by Test* shown on the previous page is one page of a multi-page report that provides: ① **Student scores –** For each *CogAT* battery and the composite, three scores are presented. Default scores are standard age scores (SAS), age percentile ranks (APR), and age stanine (AS). ② **List of student names –** Student names are listed for each battery and the composite ranked from highest SAS to lowest SAS within the group. If two or more students have the same SAS for a battery or the composite, the student names are listed alphabetically.
Sample Explained	This sample *Group List Ranked by Test* is for Ms. Greenwood's fourth grade class at Longfellow School in the Dalen Community School System. Her students took *CogAT* Form 7 Level 10 in October 2012, and fall 2011 norms were used to convert raw scores to other score types. Each box on the report shows scores for the respective *CogAT* battery and the composite. This school system elected to include these scores on the report: standard age score (SAS), age percentile rank (APR), and age stanine (AS). In the sample report, the distributions of scores for each battery are relatively similar across the class. Roary Kelly scored highest on the Verbal Battery, Kellie Murray scored the highest on the Quantitative Battery, Hope Guerrero scored the highest on the Nonverbal Battery, and Patricia Mayo scored the highest on the composite. Kim Kennedy scored the lowest on all the batteries. Felix Dawson did not have scores for the Quantitative Battery, so he does not have composite scores.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • What scores did your school or school system request? Additional scores may include grade percentile rank (GPR), grade stanine (GS), local percentile rank (LPR), and local stanine (LS). • Did your school or school system request that only the highest and lowest scores in the group be reported? Listing only the top and bottom number of scores is a reporting option. • Did your school system request this report for the building or the entire school system? If so, the report may be several pages long and will include students ranked within the larger group. This sample report is for a single class.

Individual Profile Narrative

CogAT®

PROFILE NARRATIVE FOR AIDEN BAGSBY
Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Student: Bagsby, Aiden
Student ID: 0000147548
Form/Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3

1

Abilities	Age Scores			APR Graph
	Standard Age Score	Age Stanine	Age Percentile Rank	1 25 50 75 99
Verbal	108	6	69	
Quantitative	96	4	40	
Nonverbal	94	4	35	
Composite	**99**	**5**	**48**	

2

Abilities	Raw Scores			Grade Scores		Local Scores	
	Number of Items	Number Att.	Number Correct	Grade Stanine	Grade Percentile Rank	Local Stanine	Local Percentile Rank
Verbal	62	62	52	6	69	6	75
Quantitative	52	52	32	4	38	5	44
Nonverbal	56	56	36	4	34	4	40
Composite				**5**	**47**	**5**	**53**

Notes:

4

5

Aiden's ability profile is 4B (V+). Visit www.cogat.com for more detailed information on profile 4B (V+). Click on the "Interactive Profile Interpretation System" button. Enter 4B (V+) the "Input Your Score Profile" section. Click "Search."

Number Alt. = Number Attempted
Please contact your child's teacher if you need assistance with score interpretation.

3 **Overview**

Aiden recently took the Cognitive Abilities Test (CogAT). CogAT measures the development of verbal, mathematical, and spatial reasoning abilities that are essential for success in school. Students with different patterns of scores on CogAT have different learning styles. By knowing Aiden's learning preferences, teachers can help him achieve greater success in school.

Aiden's Profile of Test Scores

Aiden's overall performance is in the average range, and his Verbal Battery score is higher than the scores on the other batteries. He has a relative strength in verbal reasoning. Whenever a student shows a particular cognitive strength, the goals for classroom instruction are

- to encourage the continued development of the strength
- to use the strength to enhance the student's development in other areas.

For example, if Aiden needs help with math, encourage him to talk about math problems and the steps needed to solve them, or ask a math question and help him work it out orally.

More Information on Aiden's Scores

The sections to the left explain Aiden's performance using different types of comparisons and score scales.

- The Age Scores section compares his performance to students across the nation who are also 8.6 years old.
- The Grade Scores section compares his performance to students across the nation who are also in grade 3.

Each of these sections includes one or more scores. The Stanine reports Aiden's performance on a scale from 1 (lowest) to 9 (highest). The Percentile Rank indicates the percentage of students in each comparison group whose scores fell below the score obtained by Aiden.

Order#: 000000000

Individual Profile Narrative

Purpose and Use

This report presents essential scores and information about a student's performance on *CogAT*. Use it to:

- identify the student's areas of relative strengths and weaknesses
- review the student's test performance for each battery and overall in comparison with national or local norms
- review the student's ability profile
- communicate the student's results to parents

Report Elements

The sample *Individual Profile Narrative* shown on the previous page is a one-page report that provides:

① **National age scores –** This box shows the student's national age scores for the three *CogAT* batteries and the composite. Scores presented are standard age scores (if selected), age stanines, and age percentile ranks. The age percentile ranks are also presented in the bar graph in the right side of the box. The **confidence band** around each score represents the range in which the score is likely to fall if the student were tested again. The student's composite score is **not** graphed so that the pattern formed by the battery score confidence bands is easy to identify.

② **Additional scores –** This box includes the student's raw score on each battery as well as national grade scores and local scores (if selected) for each of the three batteries and the composite.

③ **Interpretive information –** The narrative provides information to help teachers and parents understand the scores presented in the report. The "Overview" summarizes the purpose of the test. The "Profile of Test Scores" describes the student's overall performance on *CogAT* and lists ways that the results can be used to help the student.

④ **Notes –** The teacher can add notes to the parents in this box.

⑤ **Ability profile –** The student's ability profile is listed along with a website where teachers and parents can find more information. Refer also to "Understanding Ability Profiles" on page 12.

Sample Explained

This sample *Individual Profile Narrative* is for Aiden Bagsby, a third grade student at Longfellow School in the Dalen Community School System. Aiden took *CogAT* Form 7 Level 9 in October 2011, and fall 2011 norms were used to convert raw scores to other score types.

Aiden took all three batteries of *CogAT*. The first box on the left-hand side lists Aiden's standard age scores, age stanines, and age percentile ranks, which show how he performed compared with other students who are the same age. The right side of the box is a graph of each of Aiden's age percentile rank scores. The graph includes confidence bands, which are presented as a gray area around the score for each battery.

Continued on next page…

Individual Profile Narrative, continued

CogAT®

PROFILE NARRATIVE FOR AIDEN BAGSBY
Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Student: Bagsby, Aiden
Student ID: 0000147548
Form/Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3

1

Abilities	Age Scores			APR Graph
	Standard Age Score	Age Stanine	Age Percentile Rank	1 25 50 75 99
Verbal	108	6	69	
Quantitative	96	4	40	
Nonverbal	94	4	35	
Composite	**99**	**5**	**48**	

2

Abilities	Raw Scores			Grade Scores		Local Scores	
	Number of Items	Number Att.	Number Correct	Grade Stanine	Grade Percentile Rank	Local Stanine	Local Percentile Rank
Verbal	62	62	52	6	69	6	75
Quantitative	52	52	32	4	38	5	44
Nonverbal	56	56	36	4	34	4	40
Composite				**5**	**47**	**5**	**53**

Notes:

4

5

Aiden's ability profile is 4B (V+). Visit www.cogat.com for more detailed information on profile 4B (V+). Click on the "Interactive Profile Interpretation System" button. Enter 4B (V+) the "Input Your Score Profile" section. Click "Search."

Number Att. = Number Attempted
Please contact your child's teacher if you need assistance with score interpretation.

3 **Overview**

Aiden recently took the Cognitive Abilities Test (CogAT). CogAT measures the development of verbal, mathematical, and spatial reasoning abilities that are essential for success in school. Students with different patterns of scores on CogAT have different learning styles. By knowing Aiden's learning preferences, teachers can help him achieve greater success in school.

Aiden's Profile of Test Scores

Aiden's overall performance is in the average range, and his Verbal Battery score is higher than the scores on the other batteries. He has a relative strength in verbal reasoning. Whenever a student shows a particular cognitive strength, the goals for classroom instruction are

- to encourage the continued development of the strength
- to use the strength to enhance the student's development in other areas.

For example, if Aiden needs help with math, encourage him to talk about math problems and the steps needed to solve them, or ask a math question and help him work it out orally.

More Information on Aiden's Scores

The sections to the left explain Aiden's performance using different types of comparisons and score scales.

- The Age Scores section compares his performance to students across the nation who are also 8.6 years old.
- The Grade Scores section compares his performance to students across the nation who are also in grade 3.

Each of these sections includes one or more scores. The Stanine reports Aiden's performance on a scale from 1 (lowest) to 9 (highest). The Percentile Rank indicates the percentage of students in each comparison group whose scores fell below the score obtained by Aiden.

Order#: 000000000

Individual Profile Narrative, continued

Sample Explained, *continued*	The second box shows the number of items in each of the batteries, the number of items Aiden attempted, and the number he answered correctly (raw score). This box also lists his grade stanines and grade percentile ranks, which compare his performance in each battery with that of other third grade students in the nation. This school system elected to report scores based on local norms; those scores are listed in this box as local stanines and local percentile ranks. These scores compare Aiden's performance with that of other third grade students in the Dalen Community School System. The narrative on the right-hand side of the report indicates that Aiden's overall performance is in the average range and his Verbal Battery score is higher than his scores on the two other batteries. His parents and teachers can use the information given to help Aiden as he learns. Aiden's ability profile, **4B (V+)**, is listed in the lower left portion of the report. This profile indicates that Aiden received generally average scores with a relative strength on the Verbal Battery. His teacher and parents can use the information in this area to learn more about his ability profile and instructional strategies that may help Aiden.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • Did your school request local norms, as shown in the sample on the previous page? Local norms are a reporting option. • Did your school request that the ability profile be suppressed? If so, that information will not appear in the lower left corner of the report. • Did your school request that the APR graph show bars instead of confidence bands?

Individual Profile Narrative – Iowa Assessments/CogAT Combined

Iowa Assessments™

PROFILE NARRATIVE FOR BELINDA JONES

Iowa Assessments™/CogAT®

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1

Student Name: Jones, Belinda
Student ID: 0000146431
Form-Level: E-9
Test Date: 04/2012
Norms: Spring 2011
Grade: 3

1

Iowa Assessments	Test Scores				NPR Graph
	SS	PNPR	GE	NPR	1 10 25 50 75 90 99
Reading	204	60	5.1	75	
Written Expression	236	61	7.6	92	
Conventions of Writing	217	50	6.0	88	
Vocabulary	198	55	4.6	73	
ELA TOTAL	**216**	**58**	**6.0**	**90**	
Word Analysis		54			
Listening		50			
EXTENDED ELA TOTAL		**59**			
Mathematics	195	55	4.4	68	
Computation	177	53	3.4	32	
MATH TOTAL	**189**	**54**	**4.1**	**59**	
CORE COMPOSITE	**202**	**55**	**4.8**	**77**	
Social Studies	171	58	3.0	25	
Science	189	58	4.0	57	
COMPLETE COMPOSITE	**195**	**56**	**4.4**	**66**	

CogAT Form-Level: 7-9 Test Date: 04/2012	Test Scores							APR Graph
	RS	SAS	APR	AS	GPR	GS	LPR	1 10 25 50 75 90 99
Verbal	41	103	57	5	57	5	64	
Quantitative	31	102	55	5	56	5	43	
Nonverbal	35	104	60	6	60	6	36	
Composite (VQN)		**103**	**57**	**5**	**57**	**5**	**43**	

3

Ability Profile 5A:
Visit www.cogat.com for more detailed information on profile 5A.
Click on the "Interactive Profile Interpretation System" button.
Enter 5A in the "Input Your Score Profile" section. Click "Search."

Legend

APR = Age Percentile Rank	LPR = Local Percentile Rank	SS = Developmental Standard Score
AS = Age Stanine	NPR = National Percentile Rank	
GE = Grade Equivalent	PNPR = Predicted NPR	
GPR = Grade Percentile Rank	RS = Raw Score	
GS = Grade Stanine	SAS = Standard Age Score	

Your student was recently given the Iowa Assessments. This report is designed to give you information about your student's achievement level in core subject areas. Along with the results of this assessment, classroom work, grades, and other test results should also be reviewed for a more complete picture of your student's academic progress.

2

Your Student's Achievement Today

The graph to the left provides the National Percentile Rank (NPR) for each test and test composite in the assessment. The NPR indicates the percent of students in the same grade who obtained a lower score than your child.

Scores from 75-99 are in the above average range. Students with ELA Total and/or Mathematics Total scores in this range may be ready for more advanced work including extending ideas when reading, developing an advanced reading vocabulary, or writing with logic and clarity, as well as expanding on higher level problem solving and data analysis skills in mathematics.

Scores from 25-74 are in the low average to high average range. Students with ELA Total and/or Mathematics Total scores in this range may continue to improve by developing such skills as drawing conclusions when reading, expanding reading vocabulary, or writing with attention to sentence structure and purpose, as well as solving number sentences and reading basic charts and graphs.

Scores from 1-24 are in the below average range. Students with ELA Total and/or Mathematics Total scores in this range may require reinforcement in such areas as understanding stated information when reading, developing a basic reading vocabulary, or writing with standard usage and grammar, as well as understanding number properties or solving simple number sentences.

Your Student's Achievement Yesterday and Today

The Iowa Assessments measure student achievement and growth. The Standard Score (SS) describes a student's location on an achievement continuum from elementary through high school. The Grade Equivalent (GE) describes student performance in terms of grade level and month. Both GE and SS make it possible to follow your child's educational growth from year to year by comparing this year's scores to those from earlier years.

Order#: 000000

Please contact your child's teacher if you need assistance with score interpretation.

Individual Profile Narrative – Iowa Assessments/CogAT Combined

Purpose and Use

This report presents essential scores and information about a student's performance on *CogAT* and the *Iowa Assessments.* Use it to:

- identify the student's areas of relative strengths and weaknesses
- review the student's test performance for each battery and overall in comparison with national or local norms
- review the student's ability profile
- identify ability-achievement discrepancies
- monitor growth
- inform placement decisions
- communicate the student's results to parents

Report Elements

The sample *Individual Profile Narrative – Iowa Assessments/CogAT* shown on the previous page is a one-page report that includes:

① **Score profile and graph –** This table lists the student's scores for each *Iowa Assessments* test taken. Unique to *Iowa Assessments/CogAT* combined reports, this report can include predicted national percentile ranks (PRNR) and difference scores based on the student's *CogAT* scores. The types of scores listed are chosen when the report is ordered. The student's national percentile rank (NPR) for each test and composite score displays in the bar graph, which is a convenient way to view the student's score profile and to determine in which areas the student's achievement seems strongest and weakest. For more information about using these scores, refer to the *Iowa Assessments Score Interpretation Guide*.

② **Interpretive information –** The narrative provides information to help teachers and parents understand the information presented in the report. A description of the meaning of three ranges of national percentile ranks (NPR) is presented. The last paragraph explains how standard scores (SS) and grade equivalent (GE) scores can be used to follow the student's educational growth from year to year.

③ ***CogAT* scores –** In the box under *Iowa Assessments* results, *CogAT* scores and information are presented. The form, level, and test date are listed at the top of the left column. The second column shows the raw score for each battery and standard age scores (SAS), age percentile ranks (APR), and age stanines (AS) for each battery and the composite. These scores are based on the student's age at the time of *CogAT* testing. This column also provides the student's grade percentile ranks (GPR) and grade stanines (GS) for each battery and the composite, based on *CogAT* grade norms. The student's local percentile rank (LPR) is also provided. The student's age percentile rank (APR) for each battery and the composite score are displayed in the bar graph, which is a convenient way to view the student's *CogAT* score profile to determine how the student performed on each battery and the test as a whole.

Sample Explained

This sample report is for Belinda Jones. In the upper right-hand corner of the page, the report shows that Belinda is a third grade student in Ms. Ness' class at Longfellow School in the Dalen Community School System. She took Form E Level 9 of the *Iowa Assessments* Form E in April 2012, and spring 2011 norms were used to determine her national percentile ranks.

Continued on next page…

Individual Profile Narrative – Iowa Assessments/CogAT Combined, continued

Iowa Assessments™

PROFILE NARRATIVE FOR BELINDA JONES

Iowa Assessments™/CogAT®

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1

Student Name: Jones, Belinda
Student ID: 0000146431
Form-Level: E-9
Test Date: 04/2012
Norms: Spring 2011
Grade: 3

1

Iowa Assessments	Test Scores				NPR Graph
	SS	PNPR	GE	NPR	1 10 25 50 75 90 99
Reading	204	60	5.1	75	
Written Expression	236	61	7.6	92	
Conventions of Writing	217	50	6.0	88	
Vocabulary	198	55	4.6	73	
ELA TOTAL	**216**	**58**	**6.0**	**90**	
Word Analysis		54			
Listening		50			
EXTENDED ELA TOTAL		**59**			
Mathematics	195	55	4.4	68	
Computation	177	53	3.4	32	
MATH TOTAL	**189**	**54**	**4.1**	**59**	
CORE COMPOSITE	**202**	**55**	**4.8**	**77**	
Social Studies	171	58	3.0	25	
Science	189	58	4.0	57	
COMPLETE COMPOSITE	**195**	**56**	**4.4**	**66**	

CogAT Form-Level: 7-9 Test Date: 04/2012	Test Scores							APR Graph
	RS	SAS	APR	AS	GPR	GS	LPR	1 10 25 50 75 90 99
Verbal	41	103	57	5	57	5	64	
Quantitative	31	102	55	5	56	5	43	
Nonverbal	35	104	60	6	60	6	36	
Composite (VQN)		**103**	**57**	**5**	**57**	**5**	**43**	

3

Ability Profile 5A:
Visit www.cogat.com for more detailed information on profile 5A.
Click on the "Interactive Profile Interpretation System" button.
Enter 5A in the "Input Your Score Profile" section. Click "Search."

Legend

APR = Age Percentile Rank	LPR = Local Percentile Rank	SS = Developmental Standard Score
AS = Age Stanine	NPR = National Percentile Rank	
GE = Grade Equivalent	PNPR = Predicted NPR	
GPR = Grade Percentile Rank	RS = Raw Score	
GS = Grade Stanine	SAS = Standard Age Score	

Please contact your child's teacher if you need assistance with score interpretation.

Your student was recently given the Iowa Assessments. This report is designed to give you information about your student's achievement level in core subject areas. Along with the results of this assessment, classroom work, grades, and other test results should also be reviewed for a more complete picture of your student's academic progress.

2

Your Student's Achievement Today

The graph to the left provides the National Percentile Rank (NPR) for each test and test composite in the assessment. The NPR indicates the percent of students in the same grade who obtained a lower score than your child.

Scores from 75-99 are in the above average range. Students with ELA Total and/or Mathematics Total scores in this range may be ready for more advanced work including extending ideas when reading, developing an advanced reading vocabulary, or writing with logic and clarity, as well as expanding on higher level problem solving and data analysis skills in mathematics.

Scores from 25-74 are in the low average to high average range. Students with ELA Total and/or Mathematics Total scores in this range may continue to improve by developing such skills as drawing conclusions when reading, expanding reading vocabulary, or writing with attention to sentence structure and purpose, as well as solving number sentences and reading basic charts and graphs.

Scores from 1-24 are in the below average range. Students with ELA Total and/or Mathematics Total scores in this range may require reinforcement in such areas as understanding stated information when reading, developing a basic reading vocabulary, or writing with standard usage and grammar, as well as understanding number properties or solving simple number sentences.

Your Student's Achievement Yesterday and Today

The Iowa Assessments measure student achievement and growth. The Standard Score (SS) describes a student's location on an achievement continuum from elementary through high school. The Grade Equivalent (GE) describes student performance in terms of grade level and month. Both GE and SS make it possible to follow your child's educational growth from year to year by comparing this year's scores to those from earlier years.

Order#: 000000

Individual Profile Narrative – Iowa Assessments/CogAT Combined, continued

Sample Explained, *continued*

The table on the left side of the page shows that Belinda took all of the tests in the *Iowa Assessments* except Word Analysis and Listening. Her scores for each test and test total and the Core and Complete Composites are listed. Because she did not take the Word Analysis and Listening tests, Belinda does not have *Iowa Assessments* scores for those tests or an Extended ELA Total score. Scores reported for Belinda include standard score (SS), predicted national percentile rank (PNPR), national percentile rank (NPR), and grade equivalent (GE). Belinda's NPR scores are also displayed in the bar graph.

Because the PNPR scores are based on the student's *CogAT* scores, those scores are reported for all *Iowa Assessments* tests. Therefore, although Belinda did not take the Word Analysis and Listening tests, her *CogAT* scores were used to calculate predicted national percentile rank scores for Word Analysis, Listening, and the Extended ELA Total.

Belinda's scores on *CogAT* appear below her *Iowa Assessments* scores. Belinda took all three *CogAT* batteries, and scores reported include her raw score (RS), standard age score (SAS), age percentile rank (APR), age stanine (AS), grade percentile rank (GPR), grade stanine (GS), and local percentile rank (LPR). With the exception of GPR and GS, scores are based on the age norms using the student's age at the time of *CogAT* testing.

The narrative on the right side of the page provides guidance about how to interpret the *Iowa Assessments* NPR scores. Belinda's Computation and Social Studies scores fall in the lower half of the low average to high average range (25–75). Her Reading, Vocabulary, Mathematics, and Science scores are in the high average range (50–75), and her Written Expression and Conventions of Writing scores are in the above average range (76–99). Her Complete Composite grade equivalent (GE) score is 4.4, which means her score is similar to how a typical student at the end of the fourth month of fourth grade would score on this test.

Factors to Consider

Compare your report with the sample shown above. To help identify reasons for differences between the sample and your report, answer the following questions:

- What test scores did your school request? Additional scores may include local percentile rank (LPR), national stanine (NS), local stanine (LS), and normal curve equivalents (NCE).
- Did your school take the Survey Battery of the *Iowa Assessments*? If so, the tests listed will differ from those in the sample, which shows results for administration of the Complete Battery.

Student Snapshot

CogAT®

STUDENT SNAPSHOT
Cognitive Abilities Test™ (CogAT®)

Class:	Ness	**Student:**	Bagsby, Aiden
Building:	Longfellow	**Student ID:**	0000147548
		Form/Level:	7-9
System:	Dalen Community	**Test Date:**	10/2011
		Norms:	Fall 2011
State:	State 1	**Grade:**	3

Overview

Aiden recently took the Cognitive Abilities Test (CogAT). CogAT measures the development of verbal, mathematical, and spatial reasoning abilities that are essential for success in school. Students with different patterns of scores on CogAT have different learning styles. By knowing Aiden's learning preferences, teachers can help him achieve greater success in school.

1

Aiden's Profile of Test Scores

Aiden's overall performance is in the average range, and his Verbal Battery score is higher than the scores on the other batteries. He has a relative strength in verbal reasoning. Whenever a student shows a particular cognitive strength, the goals for classroom instruction are

- to encourage the continued development of the strength
- to use the strength to enhance the student's development in other areas.

For example, if Aiden needs help with math, encourage him to talk about math problems and the steps needed to solve them, or ask a math question and help him work it out orally.

More Information on Aiden's Scores

The sections to the right explain Aiden's performance using different types of scores.

- Age Percentile Rank (APR) indicates the percentage of students in the same age group in the national normative group whose scores fell at or below the score obtained by a particular student.

- The solid bar indicates a probable range of scores for Aiden on the given battery.

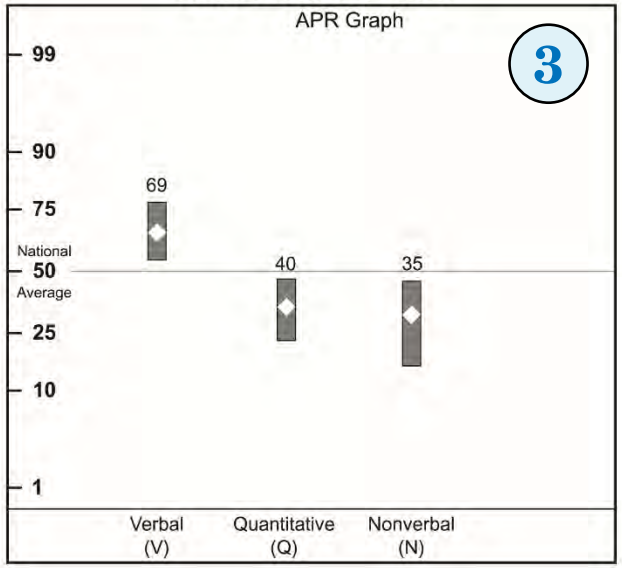
- Grade Percentile Rank indicates the percentage of students in the same grade in the national normative group whose scores fell at or below the score obtained by a particular student.

- Local Percentile Rank indicates the percentage of students in the local group whose scores fell at or below the score obtained by a particular student.

2

Aiden's ability profile is 4B (V+). Visit www.cogat.com for more detailed information on profile 4B (V+). Click on The "Interactive Profile Interpretation System" button. Enter 4B (V+) in the "Input Your Score Profile" section. Click "Search".

Score Profile for Aiden



Percentile Rank Scores for Aiden
Tested October 2011, Grade 3

Battery	Age Percentile Rank	Grade Percentile Rank	Local Percentile Rank
Verbal	69	69	75
Quantitative	40	38	44
Nonverbal	35	34	40
Composite (VQN)	**48**	**47**	**53**

4

Order#: 000000000

Student Snapshot

Purpose and Use

This report provides *CogAT* scores, the student's specific ability profile, and the learning style of the student. Use it to:

- identify the student's areas of relative strengths and weaknesses
- review the student's test performance for each battery and overall in comparison with national or local norms
- review the student's ability profile
- communicate the student's results to parents

Report Elements

The sample *Student Snapshot* shown on the previous page is a one-page report that provides:

① **Interpretive information –** The narrative provides information to help teachers and parents understand the scores presented in the report. The "Overview" summarizes the purpose of the test. The "Profile of Test Scores" describes the student's overall performance on *CogAT* and lists ways that the results can be used to help the student.

② **Ability profile –** The student's ability profile is listed along with a website where teachers and parents can find more information. Refer also to "Understanding Ability Profiles" on page 12.

③ **Score profile –** This graph shows the student's age percentile rank for each battery. The **confidence band** around each score represents the range in which the score is likely to fall if the student were tested again.

④ **Percentile rank scores –** This box provides the student's percentile rank scores for each *CogAT* battery and the composite. The age percentile rank is always reported; grade percentile ranks and local percentile ranks are reporting options.

Sample Explained

This sample *Student Snapshot* is for Aiden Bagsby, a third grade student at Longfellow School in the Dalen Community School System. Aiden took *CogAT* Form 7 Level 9 in October 2011, and fall 2011 norms were used to convert raw scores to other score types.

The narrative on the left-hand side of the report indicates that Aiden's overall performance is in the average range and his Verbal Battery score is higher than his scores on the two other batteries. His parents and teachers can use the information given to help Aiden as he learns.

Aiden's ability profile, **4B (V+)**, is listed in the lower left portion of the report. This profile indicates that Aiden received generally average scores with a relative strength on the Verbal Battery. His teacher and parents can use the information in this area to learn more details about his ability profile and instructional strategies that may help Aiden.

Aiden's Score Profile shows that he took all three batteries of *CogAT*. The graph presents each of Aiden's age percentile rank scores and includes confidence bands, which are presented as a gray area around the score for each battery. Aiden's Verbal Battery score is his highest score. Aiden scored better than 69 percent of students his age in the standardization sample; his Nonverbal Battery and Quantitative Battery scores were lower.

Continued on next page…

Student Snapshot, continued

CogAT®

STUDENT SNAPSHOT
Cognitive Abilities Test™ (CogAT®)

Class:	Ness	**Student:**	Bagsby, Aiden
Building:	Longfellow	**Student ID:**	0000147548
		Form/Level:	7-9
System:	Dalen Community	**Test Date:**	10/2011
		Norms:	Fall 2011
State:	State 1	**Grade:**	3

Overview

Aiden recently took the Cognitive Abilities Test (CogAT). CogAT measures the development of verbal, mathematical, and spatial reasoning abilities that are essential for success in school. Students with different patterns of scores on CogAT have different learning styles. By knowing Aiden's learning preferences, teachers can help him achieve greater success in school.

1

Aiden's Profile of Test Scores

Aiden's overall performance is in the average range, and his Verbal Battery score is higher than the scores on the other batteries. He has a relative strength in verbal reasoning. Whenever a student shows a particular cognitive strength, the goals for classroom instruction are

- to encourage the continued development of the strength
- to use the strength to enhance the student's development in other areas.

For example, if Aiden needs help with math, encourage him to talk about math problems and the steps needed to solve them, or ask a math question and help him work it out orally.

More Information on Aiden's Scores

The sections to the right explain Aiden's performance using different types of scores.

- Age Percentile Rank (APR) indicates the percentage of students in the same age group in the national normative group whose scores fell at or below the score obtained by a particular student.

- The solid bar indicates a probable range of scores for Aiden on the given battery.

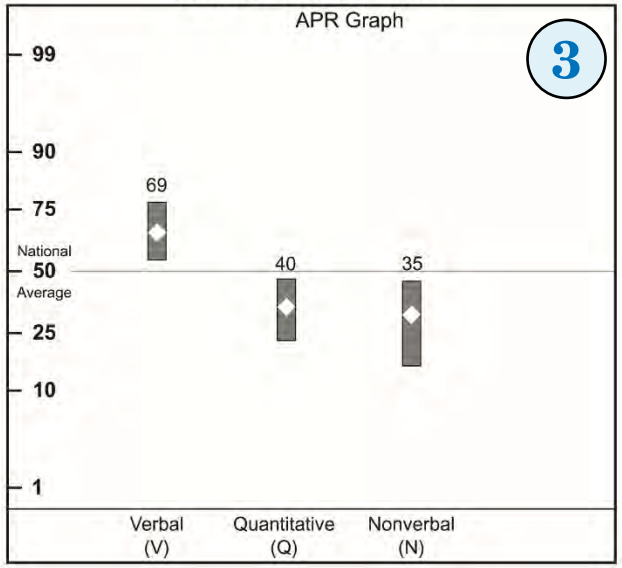
- Grade Percentile Rank indicates the percentage of students in the same grade in the national normative group whose scores fell at or below the score obtained by a particular student.

- Local Percentile Rank indicates the percentage of students in the local group whose scores fell at or below the score obtained by a particular student.

2

Aiden's ability profile is 4B (V+). Visit www.cogat.com for more detailed information on profile 4B (V+). Click on The "Interactive Profile Interpretation System" button. Enter 4B (V+) in the "Input Your Score Profile" section. Click "Search".

Score Profile for Aiden



Percentile Rank Scores for Aiden
Tested October 2011, Grade 3

Battery	Age Percentile Rank	Grade Percentile Rank	Local Percentile Rank
Verbal	69	69	75
Quantitative	40	38	44
Nonverbal	35	34	40
Composite (VQN)	**48**	**47**	**53**

4

Order#: 000000000

Student Snapshot, continued

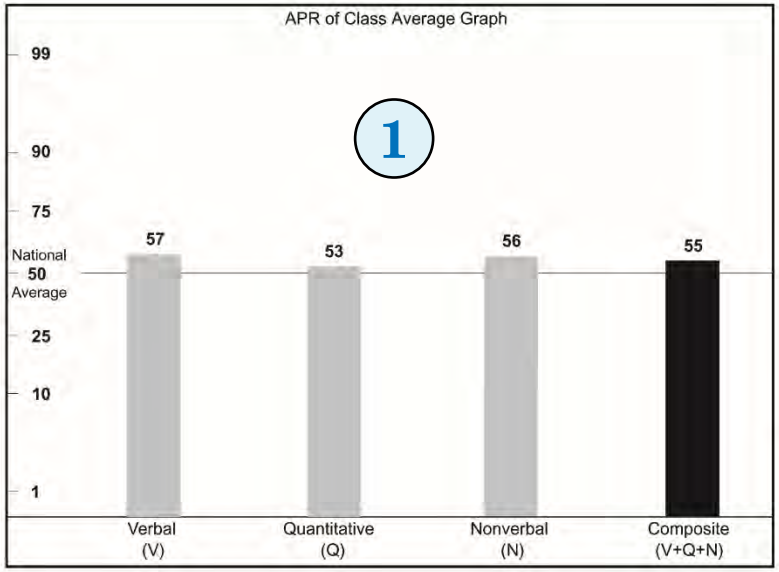
Sample Explained, *continued*	Aiden's percentile rank scores are listed in the box in the lower right portion of the report. The age percentile rank scores compare Aiden's performance with other students in the same age group. The school system also elected to include grade percentile ranks, which compare Aiden's performance with other third graders in the nation, and local percentile ranks, which compare Aiden's performance with that of other students in the Dalen Community School System.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • Did your school request that the APR graph show bars instead of confidence bands? • Did your school elect to include the composite score on the APR graph in the Score Profile? • Did your school request grade percentile ranks, as shown in the sample on the previous page? Including these scores is a reporting option. • Did your school request local percentile ranks, as shown in the sample on the previous page? Including these scores is a reporting option. • What composite score did your school request? The sample report shows the overall composite for all three *CogAT* batteries. Schools and school systems can elect to report one of three partial composites instead: verbal-quantitative (VQ), verbal-nonverbal (VN), or quantitative-nonverbal (QN). See page 42 for more information about partial composite scores.

Class Snapshot

CogAT®

CLASS SNAPSHOT
Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 1



Legend

Age Percentile (APR) indicates the percentage of students in the national normative sample whose scores fell below the average age score for this class.

Grade Percentile Rank (GPR) indicates the percentage of students in the same grade in the national normative group whose scores fell below the average score for this class.

Number of Students Included indicates those who completed the test and have valid Age Percentile Ranks.

3

2 Percentile Ranks of Class Averages for Ness, Grade 3

Battery	Number of Students Included	Age Percentile Rank	Grade Percentile Rank	
Verbal	10	57	54	
Quantitative	9	53	50	
Nonverbal	10	56	52	
Composite (VQN)	**9**	**55**	**52**	

4 Class Profile Distribution

CogAT Profile Type	Number of Students	Percent of Class
A Profile		
Battery Scores do not differ significantly (A)	5	56
B Profile		
Verbal Strength (V+)	2	22
Verbal Weakness (V-)	1	11
Quantitative Strength (Q+)	0	0
Quantitative Weakness (Q-)	0	0
Nonverbal Strength (N+)	1	11
Nonverbal Weakness (N-)	0	0
C Profile		
Verbal Strength and Quantitative Weakness (V+Q-)	0	0
Verbal Strength and Nonverbal Weakness (V+N-)	0	0
Verbal Weakness and Quantitative Strength (V-Q+)	0	0
Verbal Weakness and Nonverbal Strength (V-N+)	0	0
Quantitative Strength and Nonverbal Weakness (Q+N-)	0	0
Quantitative Weakness and Nonverbal Strength (Q-N+)	0	0

Order#: 000000000

Class Snapshot

Purpose and Use

This report provides a summary of *CogAT* scores and ability profiles for a class. Use it to:

- understand the areas of relative strengths and weaknesses for the class as a whole
- review the class' test performance for each battery and overall in comparison with national or local norms
- observe the number of students in the class who obtained different ability profiles
- plan instructional activities

Report Elements

The sample *Class Snapshot* is a two-page report. Page one of the report, shown on the previous page, provides:

① **Class profile –** This graph shows the age percentile ranks of the class average for each battery and the composite.

② **Percentile rank scores –** This box provides the class average percentile rank scores for each *CogAT* battery and the composite. The number of students included in the class average score is listed. The age percentile rank is always reported; grade percentile ranks and local percentile ranks are reporting options.

③ **Legend –** This area provides definitions of the scores and data included on the report.

④ **Class profile distribution –** This section of the report lists the number of students and the percentage of the class having each of the *CogAT* ability profiles. Refer to "Understanding Ability Profiles" on page 12.

Sample Explained

This sample *Class Snapshot* is for Ms. Ness' third grade class at Longfellow School in the Dalen Community School System. The class took *CogAT* Form 7 Level 9 in October 2011, and fall 2011 norms were used to convert raw scores to other score types.

The graph shows that this class' average performance on each *CogAT* battery and the composite are just above the 50th percentile. The box in the lower left section of the report shows that one student did not complete the Quantitative Battery and therefore also does not have a composite score. This section also lists the class average grade percentile ranks, which are in the same range as the class' age percentile ranks.

As presented in the Class Profile Distribution in the lower right section of the report, most (56 percent) of the students have a *CogAT* ability profile of **A**, indicating that their battery scores do not differ significantly. Two students have a relative strength in verbal reasoning, one has a relative weakness in verbal reasoning, and one has a relative strength in nonverbal reasoning.

Factors to Consider

Compare your report with the sample. To help identify reasons for differences between them, answer the following questions:

- Did your school request grade percentile ranks, as shown in the sample on the previous page? Including these scores is a reporting option.
- Did your school request local percentile ranks? Including these scores is a reporting option.
- What composite score did your school or school system request be reported on the graph? The sample report shows the overall composite for all three *CogAT* batteries. Schools and school systems can elect to report one of three partial composites instead: verbal-quantitative (VQ), verbal-nonverbal (VN), or quantitative-nonverbal (QN). See page 42 for more information about partial composite scores.

Class Snapshot, page 2

CogAT®

CLASS SNAPSHOT

Cognitive Abilities Test™ (CogAT®)

Class: Ness
Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 2

Stanine Legend

5

- **9** represents very high scores
- **7-8** represents above average scores
- **4-6** represents average scores
- **1-3** represents low scores

Pattern Legend

- **A** Scores for the three batteries do not differ significantly.
- **B** One score is significantly higher or lower than the other two - a relative strength or relative weakness.
- **C** Two scores that contrast - a relative strength AND a relative weakness.
- **E** Extreme score differences. Students with an E profile are indicated in gray.

Students with "A" Profiles

Student Name	Middle Stanine	Pattern
Delgado, Cira	7	A
Gambosi, Olivia	5	A
Watts, Beth	5	A
Brody, Alex	4	A
Frazier, Emma	3	A

Students with "B" Profiles

Student Name	Middle Stanine	Pattern
Verbal Strength or Weakness		
Sullivan, Reagan	8	V-
Kuehn, Payton	5	V+
Bagsby, Aiden	4	V+

6

Students with "C" Profiles

Student Name	Middle Stanine	Pattern
Nonverbal Strength or Weakness		
Brigerton, Ryan	8	Q- N+

Order#: 000000000

Class Snapshot, page 2

Report Elements	Page two of the sample *Class Snapshot*, shown on the previous page, provides: ⑤ **Ability profile legend –** This section of the report provides definitions for the stanines and patterns of the *CogAT* ability profile. ⑥ **List of students by ability profile –** Each box lists the students in the class grouped by ability profile.
Sample Explained	A review of the lists of students with **B** profiles shows that Payton Kuehn and Aiden Bagsby have a relative strength in verbal reasoning, while Reagan Sullivan has a relative weakness in that area. Ryan Brigerton has a relative strength in nonverbal reasoning and a relative weakness in quantitative reasoning. Note that only those students who completed all three *CogAT* batteries are listed on this page.

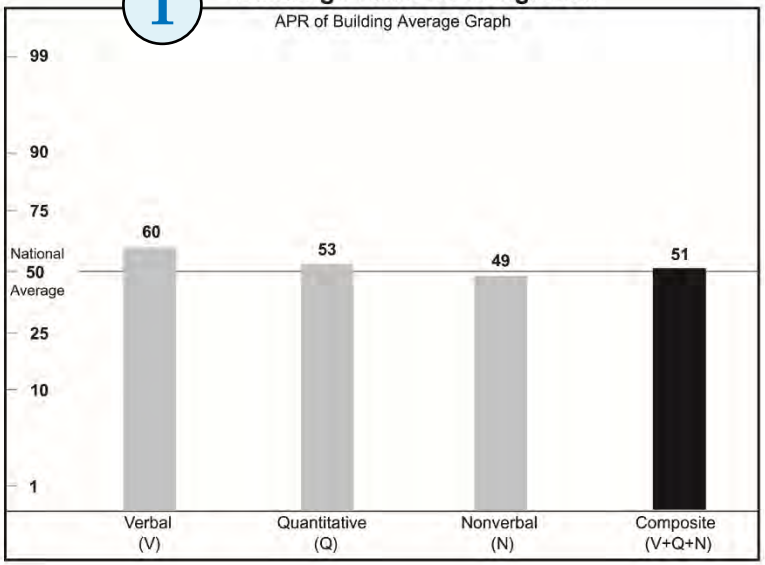
Building/System Snapshot – Building Sample

CogAT®

BUILDING SNAPSHOT
Cognitive Abilities Test™ (CogAT®)

Building: Longfellow
System: Dalen Community
State: State 1
Form-Level: 7-9
Test Date: 10/2011
Norms: Fall 2011
Grade: 3
Page: 1

1 Building Profile for Longfellow



Legend

Age Percentile (APR) indicates the percentage of students in the national normative sample whose scores fell below the average age score for this class.

Grade Percentile Rank (GPR) indicates the percentage of students in the same grade in the national normative group whose scores fell below the average score for this building.

Standard Age Scores (SAS) indicates the rate and level of cognitive development of an individual or a group compared to other students in the normative sample who are the same age. For example, groups who have an average SAS of 100 on the Verbal Battery have a rate and level of development of verbal reasoning skills that is typical for students their age.

Number of Students Included indicates those students who completed the test and have valid Age Percentile Ranks.

3

2 Percentile Ranks of Building Averages for Longfellow, Grade 3

Battery	Number of Students Included	Age Percentile Rank	Grade Percentile Rank
Verbal	33	60	54
Quantitative	32	53	50
Nonverbal	33	49	46
Composite (VQN)	**32**	**51**	**48**

4 Class/Building Comparison

	Verbal (V)		Quantitative (Q)		Nonverbal (N)		Composite (V+Q+N)	
	APR	SAS	APR	SAS	APR	SAS	APR	SAS
Longfellow	60	104.1	53	101.4	49	99.6	51	100.7
Ness	57	103.0	53	101.4	56	102.4	55	101.9
Patton	66	106.7	59	103.8	55	102.1	56	102.3
Stelter	56	102.6	49	99.4	42	96.5	45	98.0

Order#: 000000000

Building/System Snapshot – Building Sample

Purpose and Use	This report provides a summary of *CogAT* scores for a grade, building, or school system. Use it to: • understand the areas of relative strengths and weaknesses of the students in that grade for the building (or school system) • review the group's test performance for each battery and overall in comparison with national or local norms • compare the performance of the students in each class in a specific grade at the school with that of all students in that grade in the school (or compare the performance of the students in each school in the grade in the school system with that of all students in the school system)
Report Elements	The sample *Building/System Snapshot* shown on the previous page is a one-page report that provides: ① **Building profile –** This graph shows the group average age percentile ranks for each battery and the composite. ② **Percentile rank scores –** This box provides the group average percentile rank scores for each *CogAT* battery and the composite. The number of students included in the average score is listed. The age percentile rank is always reported; grade percentile ranks and local percentile ranks are reporting options. ③ **Legend –** This area provides definitions of the scores and data included on the report. ④ **Class/Building comparison –** This section of the report lists the average scores for the school and for each class in the grade within the school that took *CogAT*. If this is a school system report, the school system average scores are listed first, followed by the average scores for the grade for each building in the school system.
Sample Explained	This sample Building Snapshot is for students in grade 3 at Longfellow School in the Dalen Community School System. Students took *CogAT* Form 7 Level 9 in October 2011, and fall 2011 norms were used to convert raw scores to other score types. The graph shows that the percentile ranks corresponding to the average scores for this grade range from 49 to 60 across the three batteries, and the composite is close to the 50th percentile. The box in the lower left section of the report shows that one student did not complete the Quantitative Battery and therefore does not have a composite score. This section also lists the grade percentile ranks corresponding to the average scores. The box in the lower right portion of the report lists the percentile ranks corresponding to the average scores for this grade and standard age scores (SAS) for Longfellow School along with those scores for each third grade class at the school. In the sample, there are three third grade classes in Longfellow School. If this were a school system report, this area would list the school system's average scores for the grade and those for each building within the school system.
Factors to Consider	Compare your report with the sample. To help identify reasons for differences between them, answer the following questions: • Did your school or school system request grade percentile ranks, as shown in the sample on the previous page? Including these scores is a reporting option. • Did your school or school system request local percentile ranks? Including these scores is a reporting option. • What composite score did your school or school system request be reported on the graph? The sample report shows the overall composite for all three *CogAT* batteries. Schools and school systems can elect to report one of three partial composites instead: verbal-quantitative (VQ), verbal-nonverbal (VN), or quantitative-nonverbal (QN).

Appendix B Understanding Scores and Norms

In Brief

Before you can interpret and make use of *CogAT* results, you must first understand the different types of scores and norms used to derive and represent those results. This appendix covers the following topics:

- score types that are represented on *CogAT* score reports
- three types of norms that give meaning to *CogAT* results

This appendix includes a *Quick Reference Guide to Score Types and Norms*, a handy summary to help you recall the meaning of each score type and norm as you review and interpret *CogAT* score reports.

Score Types Explained

Raw Score

The number of correct answers that a student marks on the answer document is called the raw score.

The *CogAT Form 7 Norms and Score Conversions Guide* provides tables for converting the raw score on each battery to a universal scale score.

Universal Scale Score (USS)

The first step in developing norms for *CogAT* was to construct a universal scale score. The universal scale score is a developmental scale score that is used as the entry for all of the age and grade norms tables for *CogAT*. The USS provides a continuous growth scale of cognitive development from kindergarten through grade 12.

The *CogAT Form 7 Norms and Score Conversions Guide* provides tables for converting the USS on each battery to standard age scores, percentile ranks by age and by grade, and stanines by age and by grade. The guide also provides instructions on how to manually calculate a composite or total score for any two or for all three batteries. Tables are provided in the *CogAT Form 7 Norms and Score Conversions Guide* for converting these USS composites to standard age score composites, percentile rank composites (by age or by grade), and stanine composites (by age or by grade).

Standard Age Score (SAS)

The SAS scale is a normalized standard score scale for each battery and composite. The SAS has a mean of 100 and a standard deviation of 16. For example, students who have an SAS of 100 on the Verbal Battery have a rate and level of development of verbal reasoning skills that is typical of their age group. A student who has an SAS of 125 on the Verbal Battery has a faster

rate and a higher level of development of verbal reasoning skills than the typical student in the same age group.

The SAS allows you to compare the rate and level of cognitive development of an individual with other students in the same age group. The SAS scale provides fine discriminations among high- and low-scoring students. For this reason, the SAS is useful in determining eligibility for all types of educational programs where maximum discriminations among students at the highest or lowest extremes of the score range are needed.

Percentile Rank (PR)

A percentile rank indicates the percentage of students in the same age or grade group whose scores fall at or below the score obtained by a particular student.

For example, if a fifth grade student obtains a grade PR of 90 on the Quantitative Battery, it means that 90 percent of the fifth grade students in the standardization sample received scores that were the same as or lower than the score obtained by this particular student. For *CogAT*, percentile ranks are provided for both age and grade groups. A PR of 50 is considered average for an age or grade group.

The meaning of a percentile rank is easy to explain, making percentile ranks useful for reporting results to parents and students, particularly middle school and secondary school students. The major disadvantage of percentile ranks is that a percentile scale has unequal units that can lead a user to misinterpret the test results. For example, the difference of 5 percentile points between a student who has a grade PR of 50 on the Quantitative Battery and one who has a PR of 55 is insignificant. The two students should be considered to have the same level of cognitive development in quantitative reasoning. However, a difference of 5 percentile points between a student who has a grade PR of 90 and one who has a PR of 95 on the Quantitative Battery is very significant. The student with the higher PR should be judged to have a higher level of quantitative reasoning skills than the one with the lower PR. Refer to Figure 1 on page 107 and notice the difference in the distance on the PR scale from 50 to 55 versus 90 to 95.

Stanine (S)

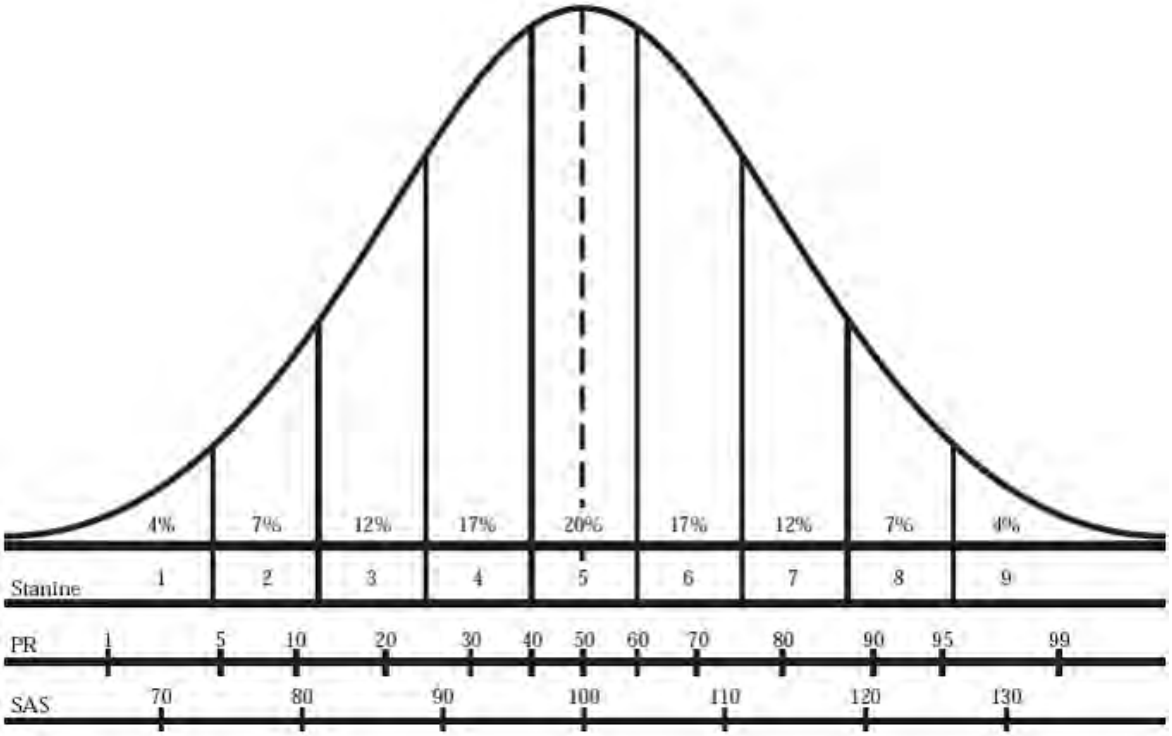
The stanine scale is a normalized standard score scale consisting of nine broad levels designated by the numbers 1 through 9. Stanines are provided for both age and grade groups.

Stanines, which are similar to percentile ranks, are relatively easy to use because they are all one-digit numbers. The major advantage of stanines is that the broad groupings discourage overinterpretation of small, insignificant differences among test scores.

Interchangeability of Normative Scores

Standard age scores, percentile ranks, and stanines reported for each battery and the composite offer three comparable ways of describing an individual's performance on *CogAT*. Figure 1 illustrates the relationship among these scores.

Figure 1. Relationship of Stanines, Percentile Ranks, and Standard Age Scores

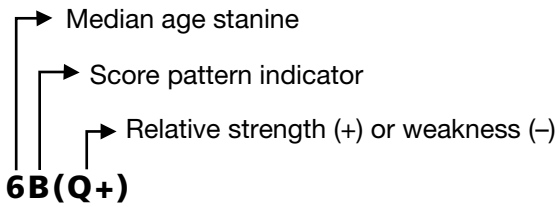


Ability Profiles

A *CogAT* ability profile captures both the pattern and the level of a student's scores on the three *CogAT* batteries, providing educators with more useful information than the composite USS. Below are several examples of *CogAT* ability profiles and their meaning:

9A	Very high scores on all three batteries
8B (Q–)	Generally high scores but a relative weakness on the Quantitative Battery
8E (Q–)	Generally high scores but an extreme relative weakness on the Quantitative Battery
5C (V+ N–)	Generally average scores but a relative strength on the Verbal Battery and a relative weakness on the Nonverbal Battery
2B (N+)	Generally below-average scores but a relative strength on the Nonverbal Battery

The information communicated in an ability profile follows the format described in the example below.



Explanations of each component of the ability profile follow:

- **Median age stanine –** The middle stanine score the student obtained across the three *CogAT* batteries. For example, if the student has stanines of 7, 3, and 6 for the Verbal, Quantitative, and Nonverbal batteries, respectively, the median stanine is 6.
- **Score pattern indicator –** One of the following letters, which indicates the pattern of the student's scores:

  A = All scores are roughly at the s**A**me level.

  B = One score is a**B**ove or **B**elow the other two—a relative strength or relative weakness.

  C = Two scores **C**ontrast—a relative strength AND a relative weakness.

  E = There are **E**xtreme score differences—at least two scores differ by 24 or more points on the SAS scale.

  Looking at a *CogAT* score report with confidence bands around the graph of each battery score, you can see how the position of those bands relative to each other indicates one of the above score patterns. Refer to the topic "Score Patterns," beginning on page 12, to see report excerpts illustrating each score pattern.
- **Relative strength or weakness –** A plus sign (+) following V, Q, or N indicates a relative strength on the Verbal, Quantitative, or Nonverbal Battery, respectively; a minus sign (–) indicates a relative weakness in the battery.

For a handy reminder on score types, refer to the "Quick Reference Guide to Score Types and Norms" on page 110.

Norms Explained

How Norms Are Used

Growth in general cognitive skills is a developmental process that begins at birth and continues throughout most of one's life. It is strongly related to age and, after age six or seven, to the level of education. Since cognitive growth is a developmental process, performance on any cognitive task can be interpreted and given meaning by comparing an individual's performance on the task with that of a representative sample of peers of the same age or the same grade in school. These types of normative comparison are used when interpreting scores on *CogAT*.

Two types of norms are provided for all levels of *CogAT*—age norms and grade norms. In school systems where the characteristics of the student population differ markedly from those of a national sample of school-aged children, local norms can be used to better distinguish the relative standings of their students.

Age Norms

Age norms allow you to compare one student's performance on the test with that of other students in the same age group.

The age norms for *CogAT* Form 7 extend from 4 years and 11 months to 21 years and 7 months. When Riverside Scoring Service scores *CogAT*, students are grouped by age in one-month intervals from 4 years and 11 months through 21 years and 7 months. When tests are hand scored, note that the *CogAT Form 7 Norms and Score Conversions Guide* uses three-month intervals beginning with 5 years and 0 months and extending to 18+ years. Age groups are identified by the midpoint of the three-month span. For example, in age-normed tables in the *Norms and Score Conversions Guide,* the column headed 5-0 covers the age span of 4 years and 11 months, 5 years and 0 months, and 5 years and 1 month.

Grade Norms

Grade norms allow you to compare a particular student's performance with that of other students in the same grade group.

The grade norms provided for *CogAT* span kindergarten through grade 12 for three test periods in the school year—fall, midyear, and spring.

Although the majority of students in a particular grade fall within a narrow age range, some individuals are much younger or much older than the typical student. For example, at the beginning of first grade, the majority of students are likely to range in age from 6 years and 2 months to 7 years; however, there are students in some first grade classes who are 5 years and 9 months old and some who are 8 years old. When a student's age is typical for the group, the student's age-normed and grade-normed scores will be identical, or nearly so. However, if individuals are very young for the grade, their age scores will be higher than their grade scores. If individuals are much older than the typical student in the grade group, their grade scores will be higher than their age scores.

For students who are younger or older than the typical student in a grade, grade norms rather than age norms are more appropriate to use when trying to understand the student's academic performance.

Local Norms

Local norms are created from the distribution of standard age scores for a particular group (e.g., school or school system) that are scored at the same time. Standard age scores use the power of national norms to control for the effects of age. If all students tested were in the same grade and tested at approximately the same time, then the effects of grade are also controlled.

In some school systems, the characteristics of the student population differ markedly from those of a national sample of school-aged children. When national norms are used in these school systems, the scores of students on both achievement and ability tests are likely to be skewed toward the high or low extremes of the score distribution. For example, some schools draw the major part of their student body from homes where the parental levels of education are very high. In schools like these, scores based on national norms for both achievement and ability tests are likely to cluster in the above-average range so that only limited discriminations can be made in the relative standings of students. In such schools, local percentile norms, which can be ordered as a special scoring service, provide a useful addition to national norms for making educational decisions.

Students with the highest SAS in the local norm group are assigned the highest local percentile rank; those with the lowest SAS in the norm group are given the lowest percentile rank. These local percentile ranks will be the same as the national percentile ranks only if the mean and standard deviation of standard age scores in each grade equal the national mean of 100 and standard deviation of 16.

For a convenient summary of score types and norms, refer to the "Quick Reference Guide to Score Types and Norms" below.

Quick Reference Guide to Score Types and Norms

Score Type	Short Description	Use/Misuse/Advantage/Limitation
Ability Profile	Captures the level and pattern of a student's scores on the three *CogAT* batteries	Use: Most useful for adapting instructional strategies, learning materials, and instructional pace to a student's individual needs. Misuses: Assuming profiles are fixed; grouping students by ability profile.
Age Norms	Allow you to compare a student's performance on the test with that of a national sample of students in the same age group	Advantage: Provide a different perspective on cognitive development than grade norms. Limitation: Failure to take into account large differences in opportunity to learn (OTL) when interpreting the scores as measures of ability.

Continued on next page…

Quick Reference Guide to Score Types and Norms. *continued*

Score Type	Short Description	Use/Misuse/Advantage/Limitation
Grade Norms	Allow you to compare a particular student's performance on the test with that of a national sample of other students in the same grade group	Advantage: Grade norms are more appropriate to use than age norms when trying to understand the academic performance of students who are younger or older than the typical student in a grade.
Local Norms	Allow you to compare a particular student's performance on the test with that of other students in the same grade group in the same school or school system (available as a special scoring service)	Advantages: Useful for school systems in which the characteristics of the student population differ markedly from those of a national sample of school-aged students. Allows for easier analysis in tight clusters of scores.
Percentile Rank (PR)[1, 2]	A score from 1 to 99 that indicates the percentage of students in the same age (APR) or grade (GPR) group who obtained the same score or lower on a test than a particular student did. Percentile ranks can be based on national norms or local norms (LPR)	Use: PR is a scoring concept that most students and parents can understand. Misuse: The percentile scale has unequal units that can lead to a misinterpretation of test results. It is often confused with percent correct.
Raw Score (RS)[1]	The number of questions a student answers correctly on a test	Use: Gives the number correct on each subtest or battery. Misuse: Comparing raw scores across subtests or test levels.
Standard Age Score (SAS)[1, 2]	A normalized standard score with a mean of 100 and standard deviation of 16	Use: Allows you to compare the rate and level of cognitive development of a particular student with others in the same age group. Useful for determining eligibility for educational programs that require fine discriminations among high- and low-scoring students. Misuse: Equating with IQ.
Stanine (S)[1, 2]	Normalized standard scores that range from 1 to 9 and have an average value of 5; stanines can be reported for students in the same age (AS) or grade (GS) group	Use: Broad groupings discourage overinterpretation of insignificant differences among test scores. Limitations: Discards information. Small differences in performance move the student from one stanine to the next higher or lower stanine.
Universal Scale Score (USS)[1]	A scale score based on a continuous growth scale from K–12; used to convert to other score types	Use: Universal scale scores are used in developing norms and in accessing all norm tables. They also can show growth in abilities when students are retested. Limitations: These scores are not easily interpreted. They are also not directly comparable across the three test batteries or with universal scale scores on previous forms of *CogAT*.

[1] For more detailed explanations of these score types, refer to the topic "Score Types Explained," beginning on page 105.

[2] For a graphical comparison of PR, SAS, and S scores, refer to Figure 1 on page 107.

Appendix C Troubleshooting Data Errors

This appendix provides guidance on identifying and handling two types of data errors:

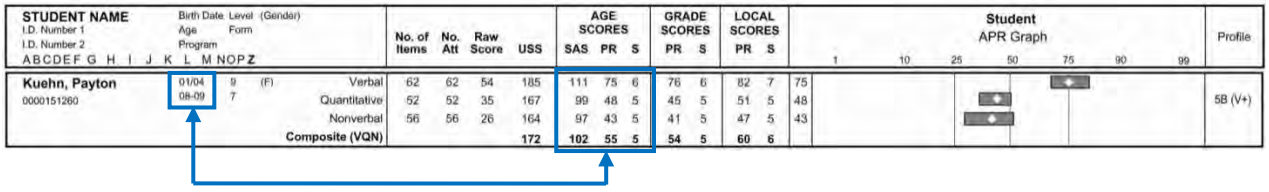
- incomplete or incorrect dates of birth
- incorrect test levels or grade levels

Dates of Birth

Review the *List of Student Scores* for the following indicators of a date-of-birth error then take appropriate action, as indicated below:

If you see…	Then it indicates…	And it means that…
A double carat (<<) next to (or in place of) a student's age **or** no age scores reported for a particular student	The student likely made an error coding his or her month and year of birth or left the birth date blank or the test date was missing or invalid.	Age scores could not be calculated. Class averages for age scores do not include students' missing age scores.
The warning symbol (**a**) next to a student's age scores	The student's age, as marked on the answer document, is unusual for the level of *CogAT* taken—either the birth date or the test level was coded incorrectly. This may also be an indication that a student was purposely tested out-of-level and that the birth date and/or test level is not necessarily incorrect (but should be verified).	Age scores for the student are reported and included in class averages, although they may be in error.
An inaccurate birth date and/or age reported for a student	A coding error is likely.	Age scores reported for that student are not valid. Class averages for age scores are not valid.

The report excerpt below shows where the student's birth date (month/year) and age (in years and months) appear and where her age scores are reported.



CogAT age scores are relative; they indicate how a student's test performance compares with that of a representative sample of students of the same age. The validity of the age scores depends upon having an accurate age for each student.

Each student's age at the time of testing (years-months) is calculated using the birth date (month/year) coded on the answer document (or provided by the school). If an incorrect birth date results in the wrong age being reported, the student's age scores will be lower or higher than they should be.

Correcting an error – If any student ages are in error, make the following corrections:

1. Delete all of the age scores for those students on all of the test records.
2. Note the correct date of birth and the age of the student on the date the test was administered.
3. Use the universal scale scores (USS to the left of the Age Scores) to locate the appropriate norms in the *CogAT Form 7 Norms and Score Conversions Guide.* When locating age scores for these students, be sure to use the correct norms tables for the three batteries (Verbal, Quantitative, and Nonverbal) and the Composite and the correct column for chronological age. Be sure to correct all of the test records for these students.

Test Levels and Grade

Review the *List of Student Scores* for the following indicators of a coded test-level error then take appropriate action, as indicated below:

If you see…	Then it indicates…	And it means that…
Warning symbol (**~**)	The student failed to code a test level or the level coded appeared incorrect.	Riverside Scoring Service detected a likely error and applied a test level before scoring; confirm the student's test level and grade.
Warning symbol (**§**)	The coded test level appears unusual for the grade indicated.	The student was intentionally tested off-level or an incorrect test level or grade was marked on the answer document.

When students take *CogAT* at one of the upper levels (9–17/18), they code the test level on their answer document. If the level coded is incorrect, the answer document will be scored using the wrong answer key. An incorrectly coded grade invalidates the student's grade percentile rank and grade stanine scores.

Correcting an error – To determine the correct grade scores, use the student's universal scale scores to access the appropriate norms tables in the *CogAT Form 7 Norms and Score Conversions Guide*.

Appendix D *CogAT* Resources Online

You can find more *CogAT* information online, such as:

Test author's website	Research studies, book chapters, copies of presentations, and other resources are available at this website. http://faculty.education.uiowa.edu/dlohman/
Interactive Ability Profile Interpretation System	Enter a student's *CogAT* ability profile to access the following resources: • a profile explanation • characteristics of students with this profile • instructional suggestions for students with this profile • general instructional suggestions for all students with a similar stanine https://www.riversideinsights.com/apps/cogat
Cognitively Speaking, the *CogAT* newsletter	The Volume 7, Fall 2011, issue provides an overview of *CogAT* Form 7. Earlier issues focus on topics related to *CogAT*, providing suggestions and examples in easy-to-understand language. https://www.riversideinsights.com/solutions/cogat?tab=3
Report to Parents (templates in English and Spanish)	School systems that hand score *CogAT* answer documents do not receive score reports but may still want a way to report results to parents. The Report to Parents can be used as a model to communicate *CogAT* scores to parents in an easy-to-understand format. The report explains what *CogAT* measures, why *CogAT* was administered, and the difference between the *CogAT* batteries. Educators can enter percentile rank scores by hand to provide parents an explanation of their student's results. https://www.riversideinsights.com/apps/cogat

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