CogAT: Ability Insights for All Educators

Cognitive Abilities Test

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December 2021
Agenda

• Cognitive Abilities Test (CogAT)
• DataManager
• Q & A
A Tradition of Assessment Excellence

- Dedicated to provide finest testing products and services
- Recognized leader in assessment publishing industry
- Decades of research-based design and format experience
- Assessments administered to millions of students
- Proven portfolio of valid and reliable tools to monitor individual growth and improve instruction
Riverside Family of Assessments

Complete solution for measuring Performance, Potential, Personalized Learning, and Growth

1. **Gauge student learning.**
   - **Iowa Assessments™**
   - Use the Iowa Assessments to understand student learning levels, evaluate program effectiveness, and measure impacts on student growth.

2. **Test what you teach as you teach.**
   - **IOWA FLEX™**
   - Use IowaFlex™ to monitor mastery of concepts throughout the school year.

3. **Measure student ability and potential.**
   - **CogAT®**
   - Use CogAT® to understand how students prefer to learn and to guide decisions on program placement aligned to student needs.
Cognitive Abilities Test - CogAT
Value of Ability Information

- Provides another perspective on student potential
  - **Achievement Test**: what a student knows
  - **Ability Test**: potential, how quickly/easily students can learn

- Use ability data to accelerate learning and close gaps for all students
- What students can learn more independently?
- Which students need skill building vs. conceptual guidance?

CogAT scores provide information about the pace of instruction, complexity, and degree of structure that will be most effective for the student.
Ability vs. Achievement

Influenced by all learning opportunities
ReQUIRES Novel problem solving and reasoning processes

- Figural Matrices
- Verbal Reasoning (e.g., analogies)
- Quantitative Reasoning (e.g., number series)

Influenced more by formal education
Requires well practiced skills and crystallized knowledge

- GPA
- SAT Subject Tests
- AP Tests
- Course Grades
- ACT Tests

Potential

Developed Skills
Measuring ability allows you to unlock insights about student potential.

Teachers can tailor instruction to match how students learn, consider students for enrichment programs that pique their interest and challenge their thinking, and uncover gaps between student achievement and ability.

*CogAT* measures abilities across the symbol systems that are most highly correlated with fluid reasoning, problem solving, and success in school.
CogAT® Form 7

• Co-developed with Iowa Assessments

• Authored by renown expert Dr. David Lohman, Professor Emeritus at the University of Iowa
  — Winner of the National Association of Gifted Children’s Paper of the Decade Award 2000-2010

• Today, Dr. Joni Lakin is Co-Author
  — Associate Professor at University of Alabama
**CogAT Form 7**

- *CogAT* is the most highly regarded and widely used group-administered abilities test
  - The most current and updated test of student abilities in kindergarten – grade 12
  - Superior technical qualities

- Provides insight into abilities not fully measured by achievement tests across three domains
  - Verbal
  - Quantitative
  - Nonverbal/Figural

**Provides insight for differentiation:**
- Pace of Instruction
- Complexity
- Degree of Structure
CogAT Form 7

• Bright 4-color design
• Completely revised to be more “ELL friendly”
  – Levels 5/6 – 8 (grades K – 2) bilingual primary battery
  – 8 of 9 subtests use only pictures, shapes and integers
  – **Online testing**: test directions in 8 languages
  – **Paper/Pencil**: Spanish and English directions
• Untimed kindergarten - 2\textsuperscript{nd}
• 90 minutes 3\textsuperscript{rd} grade +
• 2017 Norms
• Provides predicted achievement scores when administered with Iowa
CogAT Batteries

• Measures general and abstract inductive and deductive reasoning
• Across 3 areas of cognitive reasoning
• Three subtests within each battery
• Helps teachers to adapt instruction so all students can succeed

Verbal
- Picture/Verbal Analogies
- Picture/Verbal Classification
- Sentence Completion

Quantitative
- Number Analogies
- Number Series
- Number Puzzles

Nonverbal (Figural)
- Figure Matrices
- Figure Classification
- Paper Folding
## Age-Based Level Designations

<table>
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<tr>
<th>Form 7 Level Designations</th>
<th>Approximate US Grade Levels</th>
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<tr>
<td>5/6</td>
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<td>7</td>
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<td>9 – 10</td>
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<tr>
<td>17/18</td>
<td>11 - 12</td>
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</table>

**NOTE:**
Students must use the same Test Level for the Iowa and the CogAT when using a combined answer document.
Primary Grades K-2: Subtests

- Picture-based items
- No language load for English and Spanish speakers
- Printed test directions in English and Spanish
- 8 audio languages for online test directions
  - English
  - Spanish
  - Arabic
  - Cantonese
  - Mandarin
  - Russian
  - Somali
  - Vietnamese
Primary Grades K-2: Subtests

**Verbal**
- Levels 5/6-8—Verbal Battery—Picture Analogies
- Levels 5/6-8—Verbal Battery—Sentence Completion
  Which animal swims in the ocean?
- Levels 5/6-8—Verbal Battery—Picture Classification

**Quantitative**
- Levels 5/6-8—Quantitative Battery—Number Analogies
- Levels 5/6-7—Quantitative Battery—Number Puzzles
- Levels 5/6 and 7—Quantitative Battery—Number Series

**Figural / Nonverbal**
- Levels 5/6-8—Nonverbal Battery—Figure Matrices
- Level 5/6—Nonverbal Battery—Paper Folding
- Level 8—Nonverbal Battery—Figure Classification
Grades 3 - 12: Subtests

- Paper/Pencil test directions available in English or Spanish
- 8 audio languages for online test directions
  - English
  - Spanish
  - Arabic
  - Cantonese
  - Mandarin
  - Russian
  - Somali
  - Vietnamese
Grades 3 - 12: Subtests

VERBAL BATTERY

Levels 9–10—Verbal Battery—Verbal Analogies

1  TV → watch : newspaper →
   A deliver           B comics           C read           D magazine           E listen

Levels 9–10—Verbal Battery—Sentence Completion

2  The fastest runner ___ the race.
   A wins           B loses           C watches           D starts           E makes

Levels 9–10—Verbal Battery—Verbal Classification

3  apple  orange  pear
   A fruit           B carrot           C pea           D lemon           E onion

FIGURAL / NONVERBAL

Figure Matrices

1

Paper Folding

1

QUANTITATIVE BATTERY

Number Analogies

[1 → 2]  [3 → 4]  [5 → ?]
   A 2           B 4           C 6           D 8           E 12

Number Puzzles

2 = ♦ + 6
12 = ♦ − ⊗
  = 5

Number Series

1  2  4  5  7  8 →
   A 7           B 8           C 9           D 10           E 11

Figure Classification

1

2
Administration

Flexibility for different schools’ needs

Option 1: Paper and Pencil Testing with Central Scoring
- Administer tests on Riverside’s answer documents or within scannable test books then ship to Riverside Insight Scoring Service
- Access to web-based reports in DataManager within 10 days after receipt of testing materials
- Or, paper-based reports shipped out with 10 days after receipt of testing materials

Option 2: Online Testing
- Students may use PCs, Macs, iPads or Chromebooks
- Administer tests online with access to online reports in DataManager within 24-48 hours after closure of test event
- Successful completion of system check and training are required
- Online Testing? Contact: ACSI at OnlineTesting@acsi.org
**Norm Referenced Scores for CogAT**

- *CogAT* scores may be compared and evaluated in multiple ways within and between students and groups

- **National norms:**
  - **Grade Norms**
    - Compare scores to those of a nationally representative sample of students in the same grade for Fall, Midyear, and Spring
    - Our expectations for students differ across periods of the school year
  - **Age Norms**
    - Compare scores to those of a nationally representative sample of students of the same age, using one-month intervals
    - Age-related developmental differences affect our expectations for students, particularly in the early grades

- **Local Norms**
  - Created from the distribution of standard age scores for the group within your system that is tested and scored at the same time

- **Scores by individual Battery - V, Q, N**
Every student assessed with CogAT Complete receives an Ability Profile score that highlights both the level and pattern of a student's ability. CogAT is unique in offering this score that provides educational guidance for all students, not just high-ability ones.

Educators can visit www.cogat.com, plug in a student's profile, and receive:

- General characteristics of learners with this profile
- Instructional strategies tailored to the individual profile
- Additional lists of resources and support materials
Profile Explanation

Students who obtain these profiles have generally above-average scores with a relatively higher score in verbal reasoning and a relatively lower score in quantitative reasoning. They have a median stanine for the three CogAT batteries in the high (stanines 7 to 8) or very high (stanine 9) range. The majority of these students have a Composite score in the top 25 percent of their age group. Although the overall level of reasoning abilities estimated by the median stanine provides useful information (see “General Instructional Suggestions for All Students with a Median Stanine of 7, 8 or 9,” below), generalizations must be qualified by the student’s relatively higher score on the Verbal Battery and relatively lower score on the Quantitative Battery.

Characteristics of Students with These Profiles

Students who obtain these profiles have excellent resources for learning and generally show high levels of achievement. They have well-developed networks of verbal knowledge, and, on achievement tests, tend to do somewhat better than expected on the vocabulary, reading comprehension, and social studies subtests. However, on the math computation subtest, their scores tend to be lower than expected.

Instructional Suggestions for Profiles 7C (V+ Q-), 8C (V+ Q-), and 9C (V+ Q-)

In the primary grades, the relatively less developed quantitative reasoning abilities of these students seem to have a broader meaning and impact on achievement. Primary-grade students with V+ Q- profiles may have difficulties thinking about mathematical problems outside of their surrounding context. Help them attend to the specifically quantitative aspects of math story problems rather than to the story presented and the associations it may elicit. Selectively encoding stimuli in this way will help these students learn how to separate concepts from contexts.

This process and academic learning in general are much easier for these students than for most because of their particularly strong verbal reasoning abilities. Capitalize on these abilities by encouraging these students to talk about, write about, and read about the concepts they are expected to learn. For example, when teaching them skills and strategies, encourage them to keep track of the steps in the procedure by making a list of the required steps and committing it to memory. Then, as they execute the procedure or call up the strategy, have them say aloud each verbal prompt as they perform the associated action.

There is a good possibility that at least some of these students have simply not practiced their basic computation skills until they become automatic. This may be because the skills were not emphasized in the curriculum or because the students attempted to learn them silently using work sheets or computer-based math drills. Students with these profiles are more likely to succeed in learning math facts if the teaching methods capitalize on their strong verbal abilities. In particular, these students often learn better if they practice aloud and even in unison with other students, rather than silently in response to a visual stimulus. If such practice is not helpful, computation skills may be offloaded and calculators used when these students solve math problems.

General Instructional Suggestions for All Students with a Median Stanine of 7, 8 or 9

Build on Strength. Because these students have above-average reasoning abilities, they tend to profit most when allowed to discover relationships for themselves. Guided discovery methods work better with such students than more structured teaching methods. However, teachers should watch for opportunities to allow greater choice for students who would enjoy more freedom to explore. Above-average students need to be challenged with materials, projects, and problems that are somewhat more difficult than those used for average students. They have strong reasoning abilities and should be encouraged to use and derive their knowledge and critical thinking abilities. Encourage these students to follow their interests, and reward their persistence on long-term projects.
New! CogAT Dashboard Reporting

- New CogAT dashboard offers easily accessed interactive functionality for greater visibility into the data providing insights relevant to all levels of educators and administrators.

- The new CogAT Dashboard, enables educators to become more engaged with the vital information CogAT provides – to fully realize the value of this unique tool.
New! Differentiated Instruction Report

- Differentiated instruction guidance for individuals and groups of students
- Informs pace of instruction, complexity, and degree of structure that will be most effective

### Profiles 4A, 5A, 6A
Differentiated Instruction Report:

| Grade Level: | Grade 3 / Level 9 |
| Test Date:   | 07/01/2019 - Spring 2019 |

#### Students
- Anumakonda, Julissa
- Deetjen, Alexandre
- Koecke, Kaleb
- Wells, Priscilla

#### Profile Explanation
Students with these profiles have consistently low-average (stanine 4), average (stanine 5), or high-average (stanine 6) scores on CogAT. An “A” profile means that the scores are at about the same level on the verbal, quantitative, and nonverbal (spatial) reasoning batteries.

#### Characteristics of Students with These Profiles
Profile 4A to 6A students have adequate cognitive resources for learning in most academic situations. Although the majority of these students have similar levels of achievement in all academic areas, some show higher levels of interest and achievement in particular domains. Because their knowledge base is often not extensive or well organized in memory, these students may encounter difficulty recalling and applying their knowledge and skills to accomplish unfamiliar tasks. By middle school, students with average levels of reasoning abilities typically have developed a number of learning and problem-solving strategies. Often, these strategies are fairly context-bound, so these students may not always choose the most effective strategy for a task. Their flexibility is limited, and, if they try a strategy that does not work, they may not know what to do next. Profile 4A to 6A students need help to achieve objectives requiring transfer such as high-level reading comprehension skills, problem solving, and critical thinking.

#### Instructional Suggestions for Profiles 4A, 5A, 6A
**Build on Strength.** Since these students have comparable levels of verbal, quantitative, and spatial reasoning abilities, strengths will be primarily evident in interests, and, to a lesser extent, in levels of achievement in particular domains. At all ages, but especially during adolescence, students strive to achieve individuality. One route is through recognition of excellence from peers and adults. Although such recognition is commonly attained through nonacademic activities such as sports, music, and other extracurricular activities, teachers should find ways to encourage student’s particular academic accomplishments. Profile 4A to 6A students can be recognized for their high levels of knowledge in particular domains. Sometimes they excel in other ways, such as in leading discussions, presenting reports, creating science projects, writing essays, or assisting other students in learning. Finding and nourishing the islands of excellence in all student’s schoolwork spreads encouragement.

**Focus on Working Memory.** Students with levels of reasoning abilities that are typical for their age frequently must learn at the limits of their working memories, especially when tasks are new or require the simultaneous execution of several processes. Changes in instructional methods that reduce these burdens on working memory can, therefore, have a significant impact on their success in learning. For example, if a task involves comparing two concepts, it will be much easier if both are simultaneously in view. Have students put all the needed information in one place—on a single sheet of paper or a single concept map.

Educators can also reduce working-memory burdens for these students by using familiar concrete concepts rather than unfamiliar abstract symbols. Familiarity is greatest for overlearned concepts and skills. Practice on low-level skills can free working memory for higher-level processing. Monitoring themselves as they execute a skill is especially troublesome for these students, particularly in the primary grades. Offloading monitoring to another individual by having students work in pairs can be especially effective early in the process of acquiring a new skill or strategy.

**Scaffold Wisely.** Students with average scores tend to learn more effectively in school environments that are somewhat, but not highly, structured. These students tend to learn best when instruction is moderately paced and
### Aiden’s Ability Profile

Aiden’s ability profile is 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".

### 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 scores on the three batteries do not differ significantly. All three of his scores are in the range typically observed in students of this age. For students who have reasoning scores in the average range, the following steps may be helpful:

- **Build on Aiden’s strengths by encouraging academic accomplishments in areas that interest him.**
- **Point out how new skills and information build on knowledge and skills Aiden already has.**
- **Show Aiden how to break complex tasks into simpler steps. Model the steps as you explain them. Write the steps on a sheet of paper and let Aiden work with a partner to follow them.**
- **Teach Aiden study skills such as planning use of time, formulating questions to guide study, and taking notes.**

### 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.**
- **The Local Scores section compares his age score performance to students in your local area 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.
<table>
<thead>
<tr>
<th>Student Name</th>
<th>Birth Date</th>
<th>Level</th>
<th>Sex</th>
<th>Verbal</th>
<th>Quantitative</th>
<th>Nonverbal</th>
<th>Composite (VQN)</th>
<th>Age Scores</th>
<th>Grade Scores</th>
<th>Local Scores</th>
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* = Targeted score, $\dagger$ = Inconsistent response pattern
Digital Resource Library

• Use resources to
  – Plan for testing
  – Download practice activities
  – Understand reporting options
  – Interpret test results

• Enhanced suite of ancillary materials
  – Free in the DataManager platform
  – CogAT Practice activities
  – Planning and Implementation Guide
  – Web Reporting Guide
  – Score Interpretation Guide
  – NEW! Guide for Teachers
    • Provides instructional guidance
    • Build on strengths
    • Shore up weaknesses
DataManager – One Platform
 DataManager is your single tool to put the power of assessment in your hands—before, during, and after testing.
DataManager – One Platform

DataManager is your online resource for streamlining the management of your assessment program using:

- Iowa Assessments
- IowaFlex
- CogAT Test
- Logramos

**Preparing for Testing**
- Construct and manage student rosters
- Create events
- Assign students
- Provides step-by-step guidance through ancillaries

**Administering Tests**
- Supports central scoring of answer documents
- Includes roster and bar code file templates and instructions
- Supports online test administration
- Provides guidance through Directions for Administration

**Interpreting Results**
- Provides guidance through digital resources
- Links to next steps, such as making adjustments to curriculum or grouping learners
- Enables targeted instruction via Lexile and Quantile measures

**Reporting**
- Delivers web-based reports
- Combines results from different assessments
- Enables disaggregation of results
- Enables local printing of reports
- Allows exporting of results
Remote Administration

Remote Testing Interest Form

Please complete this form to receive information about using the Iowa Assessments for remote / in-home administration with online testing.

Name *

First Name

Last Name

Email *

School Phone *

https://acsi.formstack.com/forms/remote_testing_inquiry_form

Note: Only Iowa Assessments Form E and CogAT Form 7 are permitted for remote testing. IowaFlex is also available for remote administration.
CogAT Dashboard Video

Scoring and Reporting
To gain the rich insights into student abilities that CogAT offers, you can choose from a variety of reports that serve the needs of different stakeholders, from families to teachers to administrators. Watch the videos below to learn more about the new CogAT Reporting Dashboard.

https://your.acsi.org/pdp-store/Student-Assessment-Program-Support/Iowa-Assessment-CogAT
Contact Information

Questions about Iowa Assessments, CogAT or Benchmarking?

**Wendy Freyschlag**, Riverside Assessments Consultant
wendy.freyschlag@riversideinsights.com
303.517.3579

Questions for Association of Christian Schools International?

**Lisa Chubbic**, ACSI Assessment Program Coordinator
AssessmentSupport@acsi.org
719.867.0139

Interested in testing online?

**Gina Kinnard**, ACSI Assessment Program Executive Asst.
OnlineTesting@acsi.org
719.867.0246
Looking For More Information?

For more information about Iowa Assessments and CogAT, go to www.purposefuldesign.com

Select Assessment Support, then Iowa Assessments
• Materials Pricing Tool
• Scoring Cost Estimation Tool
• Quick Facts
• Product Information Request Form
• Talk to an Expert Request Form
• Program Details

For additional assistance, contact ACSI Care Team
careteam@acsi.org
800-367-0798
Thank You!