One

OVERVIEW

At the time of its development, the original Kaufman Assessment Battery for Children (K-ABC; Kaufman & Kaufman, 1983a, 1983b) was innovative as a theory-based, empirically grounded clinical instrument. However, since the K-ABC's inception, many other tests have entered the field to provide clinicians with a plethora of tests that are theory based and empirically sound (e.g., Woodcock-Johnson III [WJ III; Woodcock, McGrew, and Mather 2001]; Cognitive Assessment System [CAS; Naglieri & Das, 1997]). The Kaufman Assessment Battery for Children—Second Edition (KABC-II; Kaufman & Kaufman, 2004a) takes assessment to a new level by basing the test on a dual theoretical model and allowing clinicians to select the model for each child that is best suited to that particular child's background and reasons for referral. The KABC-II also focuses more on specific, rather than global, constructs that provide useful insights into children's learning abilities and problem-solving strategies. The KABC-II represents a substantial revision of the K-ABC, with only 8 of the original 16 K-ABC subtests retained for the KABC-II, and with 10 new subtests joining the revised battery.

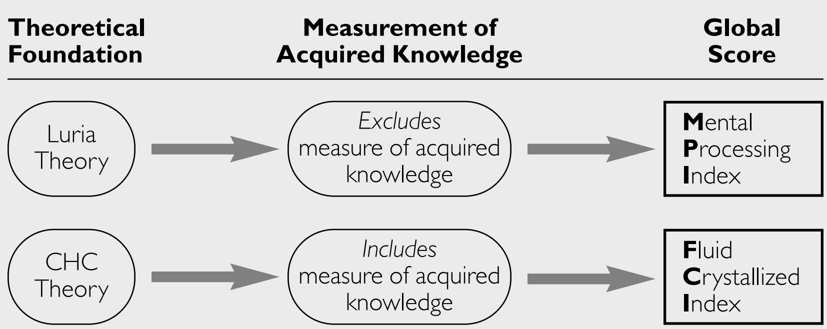
This book was developed for those who test children within the 3- to 18-year-old age range and wish to learn the essentials of the KABC-II in a direct, no-nonsense, systematic manner. The main topics covered here are administration, scoring, interpretation, and clinical use of the instrument. Important points are highlighted throughout the book in "Rapid Reference" boxes, "Caution" boxes, and "Don't Forget" boxes. Each chapter contains questions that are intended to help you consolidate what you have read. After reading this book, you will have at your fingertips in-depth information to help you become a competent KABC-II examiner and clinician.

This chapter reviews the history of the K-ABC, the development of the KABC-II and the theoretical foundations of the test, and provides a thorough description of the test, its reliability, and its validity. In addition, we highlight changes from the K-ABC to the KABC-II as well as noting general uses for the test. However, before delving into these details of the KABC-II, we feel it is important to emphasize some important facts about the test. The KABC-II is founded in two theoretical models: Luria's (1966, 1970, 1973) neuropsychological model, featuring three blocks, and the Cattell-Horn-Carroll (CHC) approach to categorizing specific cognitive abilities (Carroll, 1997; Flanagan, McGrew, & Ortiz, 2000). The KABC-II yields a separate global score for each of these two theoretical models: The global score measuring general mental processing ability from the Luria perspective is the Mental Processing Index (MPI), and global score measuring general cognitive ability from the CHC perspective is the Fluid-Crystallized Index (FCI). The key difference between these two global scores is that the MPI (Luria's theory) *excludes* measures of acquired knowledge, whereas the FCI (CHC theory) *includes* measures of acquired knowledge. Only one of these two global scores is computed for any examinee. Prior to testing a client, examiners choose the interpretive system (i.e., Luria or CHC) that best fits with both their personal orientation and the reason for referral. Deciding which interpretive system to use will dictate which global score is reported and also whether measures of acquired knowledge are included from the core battery (see Rapid Reference 1.1).

The authors of the KABC-II clearly state in the manual (Kaufman & Kaufman, 2004a, p. 4–5) that "the CHC model should generally be the model of choice, except in cases where the examiner believes that including measures of acquired knowledge/crystallized ability would compromise the validity of the Fluid-Crystallized Index." In those cases, the Luria global score (MPI) is preferred. The first Don't Forget box reviews when it is advisable to administer the FCI and MPI.

Rapid Reference 1.1

Select One of Two Theoretical Models Prior to KABC-II Administration



DON'T FORGET

When to Administer the FCI or MPI

CHC Model is Preferred (FCI)	Luria Model is Preferred (MPI)
• In the majority of cases. • If a child has (or is suspected of having) a disability in reading, written expression, or mathematics. • If a child has mental retardation. • If a child has Attention-Deficit/Hyperactivity Disorder. • If a child has an emotional or behavioral disturbance. • If a child may be gifted.	• If a child is from a bilingual background. • If a child's nonmainstream cultural background may have affected his or her knowledge acquisition and verbal development. • If a child has known or suspected language disorders (expressive, receptive, or mixed). • If a child has known or suspected autism. • If a child is deaf or hard of hearing. • If the examiner has a firm commitment to the Luria processing approach and believes that acquired knowledge should be excluded from any cognitive score.

Note. Examiners must select either the Luria or CHC model before testing the child or adolescent. The global score that the examiner decides to interpret should be based on referral and background factors. Both Luria and CHC theories are equally important as foundations of the KABC-II. Neither is deemed theoretically superior to the other.

HISTORY AND DEVELOPMENT

The K-ABC was developed in the late 1970s and early 1980s and was published in 1983, during a time when IQ was largely a Wechsler-Binet monopoly; anti-IQ sentiments were rampant, with racial inequities at the forefront of most discussions; and the gap between theories of intelligence and measures of intelligence was a chasm. The Binet tradition was empirical and practical in contrast to the clinical tradition spawned by Wechsler the man and Wechsler the test developer. Neither orientation paid more than lip service to the burst of theories in cognitive psychology, neuropsychology, intelligence, and learning. Even the original Woodcock-Johnson Psycho-Educational Battery (WJ; Woodcock & Johnson, 1977), whose subsequent revisions became the quintessential application of intelligence theory to practice, was developed from a decidedly practical, nontheoretical foundation. And when old tests were revised (Wechsler, 1974, 1981) or new tests were developed (McCarthy, 1972), there were precious few novel tasks to supplement the traditional tasks developed during the early 1900s. The 1978 WJ was indeed replete with novel subtests, but for years the cognitive portion of this instrument was primarily a test used by special educators, not psychologists.

Although more than a half-century's worth of brain-related and thinking-related theories were obviously related to the measurement of intelligence, they did not invade the domain of IQ assessment until the 1980s with the advent of the K-ABC in 1983. The K-ABC broke from tradition, as it was rooted in neuropsychological theory—Sperry's (1968) cerebral specialization approach and the Luria-Das successive-simultaneous processing dichotomy. Both the Sperry and the Luria-Das models are characterized by a dual-processing approach that has been well supported by a large body of cognitive and neuropsychological research (Das et al., 1979; Neisser, 1967).

Shortly after the publication of the K-ABC, other tests were developed with theoretical underpinnings, such as the Stanford-Binet IV (Thorndike, Hagen, & Sattler, 1986) and the Woodcock-Johnson—Revised (WJ-R; Woodcock & Johnson, 1989). In the 1990s and early 2000s, further clinical tests with strong empirically grounded theoretical foundations were developed: the Kaufman Adolescent and Adult Intelligence Test (KAIT; Kaufman & Kaufman, 1993), the WJ III, and the CAS.

In addition to the K-ABC's theoretical underpinnings, its fairness in assessing children from diverse minority groups made it stand out above other tests, such as those developed from the Binet-Wechsler tradition. The size of group differences on tests of cognitive ability between white children and minority children is thought to reflect, in part, the cultural fairness of a test. Tests such as the Wechsler scales have typically yielded differences of about 15–16 points in favor of white children versus African-American children, but the K-ABC cut those differences in half (Kaufman & Kaufman, 1983b). Numerous research studies have shown that Latino or Latina children and Native American children also tended to score higher on the K-ABC than on conventional measures, resulting in reduced differences between white and minority children (e.g., Campbell, Bell, & Keith, 2001; Davidson, 1992; Fourqurean, 1987; Valencia, Rankin, & Livingston, 1995; Vincent, 1991; Whitworth & Chrisman, 1987).

The innovative features of the K-ABC did not shelter it from controversy, with many psychologists and educators expressing strong positive and negative comments about the test. Voicing the diverse and varied responses among professionals was a special issue of the *Journal of Special Education* that was devoted to the

K-ABC (Miller & Reynolds, 1984). Kamphaus (1993, 2003) has reviewed and summarized the various perspectives on the K-ABC. The K-ABC's psychometric qualities were recognized as a clear strength, as well as its use of teaching items and the implementation of several novel subtests (Kamphaus, 2003). In contrast, the limited floor and insufficient ceiling on some subtests were noted as negative aspects of the K-ABC. Additionally, some professionals questioned whether the K-ABC's scales measured their intended mental processes (sequential and simultaneous) as opposed to measuring other abilities, such as semantic memory and nonverbal reasoning (Keith & Dunbar, 1984).

In revising the K-ABC and developing the KABC-II, the Kaufmans consid-

DON'T FORGET

Inspiration for KABC-II Subtests

Subtest	Inspiration
Atlantis	Memory for Names of WJ-R (Woodcock & Johnson, 1989)
Atlantis—Delayed	Talland (1965)
Block Counting	Cube Analysis (Yoakum & Yerkes, 1920)
Conceptual Thinking	Columbia Mental Maturity Scale (Gurgemeister, Blum, & Lorge, 1954, 1972)
Expressive Vocabulary	Stanford-Binet Picture Vocabulary task (Terman, 1916)
Face Recognition	Kagan and Klein (1973)
Gestalt Closure	Gestalt Completion Test (Street, 1931)
Hand Movements	Luria (1966)
Number Recall	Binet and Simon (1905)
Pattern Reasoning	X-O Test (Yoakum & Yerkes, 1920)
Rebus Learning	Visual-Auditory Learning of *Woodcock Reading Mastery Tests* (Woodcock, 1973)
Rebus Learning—Delayed	Talland (1965)
Riddles	Conceptual Inference (Kagan & Klein, 1973)
Rover	Tower of Hanoi (Cook, 1937)
Story Completion	DeCroly (1914)
Triangles	Kohs (1927)
Verbal Knowledge	Stanford-Binet Pictorial Identification task (Terman, 1916)
Word Order	McCarthy (1972) and Das, Kirby, & Jarman (1979)

ered several factors: the perspectives of psychologists and educators on the original K-ABC, the enormous amount of research on the test, and the current needs of clinicians as dictated by political, social, economic, and educational concerns. The second chapter of the KABC-II Manual (Kaufman & Kaufman, 2004a) details the goals for the test's revision. As we review in Rapid Reference 1.2, the goals for the KABC's revision included strengthening the theoretical foundations, increasing the number of constructs measured, enhancing the test's clinical utility, developing a test that fairly assesses children from minority groups, and enhancing fair assessment of preschoolers. In Rapid Reference 1.2 we also describe how each of these goals was achieved. Each of the subtests that was retained from the K-ABC, or newly developed for the KABC-II, was included to help meet the goals of the second edition (the Don't Forget box lists the inspiration for each KABC-II subtest).

THEORETICAL FOUNDATIONS OF THE KABC-II

The following sections describe the theoretical traditions that contributed to the development of the KABC-II.

Luria's Neuropsychological Theory

Luria (1970) believed that three main blocks or functional systems represented the brain's basic functions. These three blocks are responsible for arousal and attention (block 1); the use of one's senses to analyze, code, and store information (block 2); and the application of executive functions for formulating plans and programming behavior (block 3). Rapid Reference 1.3 explains how these blocks map to particular areas of the brain. Empirical research strongly supports Luria's clinical documentation of the three functional units (see, for example, Das, Naglieri, & Kirby, 1994; Naglieri, 1999; Naglieri & Das, 1997).

In his theory, Luria emphasized that the integration and interdependence of these blocks into functional systems is necessary in order to be capable of complex behavior; this integration is a key feature of Luria's approach to brain functioning (Naglieri, 1999; Reitan, 1988). The joint operation of several brain systems is crucial for children to learn new material efficiently. The Kaufmans focused on the integrative aspects of Luria's theory, rather than on each block's specific functions, in the construction of the KABC-II.

Indeed, the KABC-II was designed primarily to measure high-level, complex, intelligent behavior. Conceptually, the integration of Luria's blocks captures that complexity. Luria's theory emphasizes the integration of the incoming stimuli

Rapid Reference 1.2

Revision Goals of the KABC-II

1. Strengthen theoretical foundations

- Recognized that multiple theories were needed to explain the concepts measured by KABC-II scales
- Retained original Luria-based interpretations of scales
- Added CHC-based interpretation of scales
- Linked neuropsychological and psychometric theories with the dual theoretical foundation
- Developed subtests that measure more than one aspect of children's ability, allowing alternative theoretical interpretations of scales

2. Increase number of constructs measured

- Considered the forthcoming changes in IDEA guidelines
- Recognized that several specific abilities, rather than global abilities, are needed to help identify process disorders and to target interventions
- Enhanced measures of learning and planning in addition to sequential and simultaneous processing

3. Enhance clinical utility

- Extended age range to 3 years through 18 years
- Strengthened floors for young children and ceilings for older children
- Kept achievement (*Gc*) as a distinct construct, apart from general cognitive ability, and allowed clinicians to decide when to administer the Knowledge/*Gc* subtests to clients.
- Added qualitative indicators (QIs) for each subtest that allow examiners to record pertinent clinical observations during the evaluation
- Is suitable for inclusion in a neuropsychological assessment battery

4. Fairly assess children from minority groups

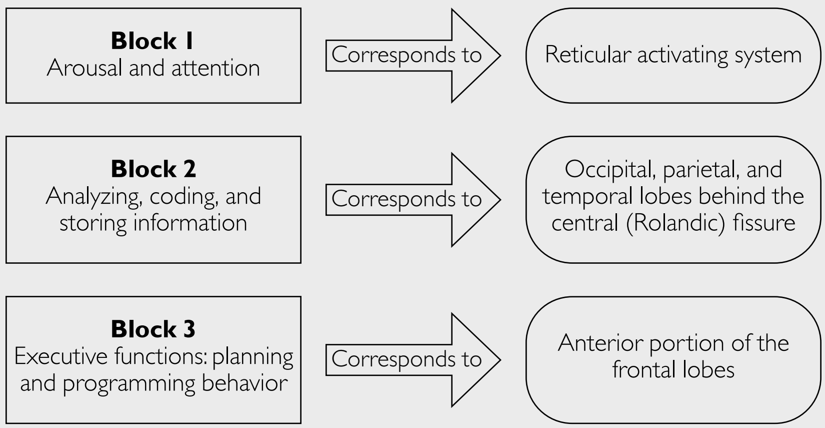
- Allowed examiners to exclude measures of verbal ability and factual knowledge when appropriate
- Retained teaching items to ensure that a child's performance is not due to lack of understanding the test's directions
- Simplified instructions
- Offered a nonverbal scale

5. Enhance fair assessment of preschoolers

- Retained teaching items
- Simplified administration and scoring procedures
- Limited verbalizations required for preschool children
- Constructed child-oriented, gamelike test stimuli
- Developed adequate floors for low-functioning preschoolers

Rapid Reference 1.3

How Luria's Blocks Map to Brain Structures



and the responsibility of block 2 to make connections with block 3. Thus, the KABC-II includes subtests that require synthesis of auditory and visual stimuli (e.g., Word Order, Atlantis, Rebus Learning, and Rover). To capture the linkage between blocks 2 and 3, the KABC-II includes measures of simultaneous processing that not only require the analysis, coding, and storage of incoming stimuli but also demand executive functioning and problem solving for success (e.g., Rover, Conceptual Thinking).

Cattell-Horn-Carroll (CHC) Theory

Whereas Luria's theory was driven by his own clinical and neuropsychological research and his respect for the work of others, the CHC model is a psychometric theory that rests on a large body of research. Thus, CHC theory represents a data-driven theory, in contrast to the distinctly clinical origins of Luria's model (although Luria's theory has also been empirically validated).

As explained by Kaufman and Kaufman (2004a), two theories were merged into a single model in the late 1990s to create CHC theory: (1) Raymond Cattell's (1941) original two-pronged *Gf-Gc* theory, which was expanded and refined by John Horn (1965, 1989) to include an array of abilities (not just *Gf* and *Gc*); and (2) John Carroll's (1943, 1993) half-century of rigorous pursuit to satisfy "the field's need for a thoroughgoing survey and critique of the voluminous results in the factor-analytic literature on cognitive abilities" (Carroll, 1993, p. vii).

Both the Cattell-Horn and Carroll models essentially started from Spearman's (1904) *g*-factor theory, and ended up with consistent conclusions about the spectrum of broad cognitive abilities. Horn and Carroll ultimately merged their separate but overlapping models into a unified theory called Cattell-Horn-Carroll (CHC) theory. The details of CHC theory have been articulated by Dawn Flanagan, Kevin McGrew, and Samuel Ortiz (2000; Flanagan & Ortiz, 2001; McGrew, Woodcock, & Ford, 2002).

Cattell's (1963) system revolved around the concept of general intelligence (*g*), as he posited two types of *g* abilities, not just one: Fluid intelligence (*Gf*), the ability to solve novel problems by using reasoning, which Cattell considered to be largely a function of biological and neurological factors and to be vulnerable to the effects of aging; and crystallized intelligence (*Gc*), a knowledge-based ability believed to be highly dependent on education and acculturation and resistant to the impact of aging.

Horn collaborated with Cattell on a series of studies to enrich and validate the two aspects of *g* (Cattell & Horn, 1978; Horn & Cattell, 1966, 1967). However, Horn believed that the psychometric data, as well as neurocognitive and developmental data, were suggesting more than just these two general abilities. Early in his collaboration with Cattell, Horn (1965, 1968) identified four additional abilities—Short-Term Acquisition and Retrieval (*Gsm*), Long-Term Storage and Retrieval (*Glr*), Visual Processing (*Gv*), and Speed of Processing (*Gs*). Horn subsequently refined the definition and measurement of these factors and added additional factors, so that by the late 1980s to mid-1990s his model included 9 to 10 Broad Abilities (Horn, 1989; Horn & Hofer, 1992; Horn & Noll, 1997). Although the theory continued to be called *Gf-Gc* theory, the multiple Broad Abilities were treated as equals, not as part of any hierarchy.

Based on his in-depth survey of factor-analytic studies, Carroll (1993, 1997) developed a hierarchical theory composed of three levels or strata of abilities, which are detailed in Rapid Reference 1.4. Horn's *Gf-Gc* theory always focused on the Broad Abilities, and he discussed the more specific or narrow abilities as well, but the *g* construct had no place in his *Gf-Gc* theory. Otherwise, the Carroll and Cattell-Horn theories were similar enough to warrant their merger into the new CHC theory. Differences between the theories have been spelled out elsewhere (Flanagan et al., 2000; Flanagan & Ortiz, 2001; McGrew et al., 2002).

When CHC theory is applied to the KABC-II, the *g* level is not intended as a theoretical construct but as a practical one to provide a summary score. There are five CHC Stratum II abilities (corresponding to five KABC-II scales) that are

Rapid Reference 1.4

Carroll's Three-Stratum Hierarchy

Level of Hierarchy	Number of Abilities	Description
Stratum III (general)	1	A Spearman-like *g,* which Carroll (1993, 1997) considered to be a valid construct based on overwhelming evidence from factor analysis
Stratum II (broad)	8	Correspond reasonably closely to Horn's (1989) Broad Abilities and "show rough correspondences to Gardner's [1993] seven 'intelligences'" (Carroll, 1997, p. 127)
Stratum I (narrow)	70	Organized by the Broad Ability with which each is most closely associated, many of which indicate the person's "level of mastery, along a difficulty scale," "speed with which the individual performs tasks," or "rate of learning in learning and memory tasks" (Carroll, 1997, p. 124)

measured by the KABC-II (*Glr, Gsm, Gv, Gf,* and *Gc*). An additional sixth Broad Ability, Quantitative Knowledge (*Gq*), is also tapped by the KABC-II because the Narrow Ability of Mathematical Achievement is measured by two subtests as a secondary ability (Rover and Block Counting both require the child to count). Four Broad Abilities and their respective Narrow Abilities are excluded from the KABC-II: Reading and Writing (*Grw*), Auditory Processing (*Ga*), Processing Speed (*Gs*), and Decision/Reaction Time/Speed (*Gt*).

Separate measures of *Gq* or *Grw* were not included on the KABC-II because the authors view reading, writing, and mathematics as more appropriate for tests of academic achievement than for tests of cognitive ability (these abilities are measured by both the Brief and Comprehensive Forms of the Kaufman Test of Educational Achievement—Second Edition (KTEA-II; Kaufman & Kaufman, 2004b). Auditory Processing (*Ga*), Processing Speed (*Gs*), and Decision/Reaction Time/Speed (*Gt*) were also not included on the KABC-II because they lacked the requisite complexity for inclusion in the Kaufmans' test battery. When the KABC-II is administered alongside the KTEA-II Comprehensive Form, then the number of Broad Abilities measured by the combined set of subtests increases from five to eight, and the number of CHC Narrow Abilities measured more than doubles (see the section in Chapter 6 on integrating the KABC-II and KTEA-II).

PURPOSES AND USES OF THE KABC-II

The KABC-II can be used to assess preschool-age and school-age children, as well as adolescents. The types of assessments that it may be used for include psychological, clinical, psychoeducational, and neuropsychological evaluations. The results from such evaluations may be used in making clinical and educational diagnoses, in educational and treatment planning, and in making placement decisions. Like the original K-ABC, the KABC-II is quite useful for the assessment of African American, Hispanic, Native American, and Asian-American children and adolescents within a wide variety of settings.

The number of children in prekindergarten through 12th grade who were served under the Individuals with Disabilities Education Act and Chapter 1 of the Education and Consolidation and Improvement Act in 2000–2001 numbered nearly 6.3 million (U.S. Department of Education, 2002). That number indicates that approximately 13% of students enrolled in public education problems are considered disabled and receive some type of special programming. Thus, a very large number of children need assessments to create effective educational and psychological interventions.

When the KABC-II is administered as part of a larger battery of tests, it is optimally useful. To identify mental retardation, for example, the KABC-II can be used in conjunction with measures of adaptive behavior. When it is combined with informal measures of creativity and talent, it can identify intellectual giftedness. To better understand brain-behavior relationships in individuals with brain dysfunction or damage, the KABC-II can be administered along with measures of specific neuropsychological functioning. To evaluate students with known or suspected learning disabilities, administer the test with measures of achievement.

For children across the spectrum of cognitive ability, the KABC-II helps identify an individual's strengths and weaknesses in cognitive ability and mental processing. It helps identify disorders of basic psychological processing, a key aspect of the definition of learning disabilities. Educational interventions and treatment plans can be developed based on the results of KABC-II profile analyses.

DESCRIPTION OF THE KABC-II

The KABC-II is a measure of the processing and cognitive abilities of children and adolescents between the ages of 3 years 0 months and 18 years 11 months. It is organized into three levels (age 3, ages 4–6, ages 7–18). The KABC-II yields from one to five scales depending on the age level of the child and the interpretive approach that the clinician chooses to take. At age 3, there is only one scale, a global measure of ability, composed of either five subtests (MPI) or seven subtests (FCI). For ages 4–6, subtests are organized into either three scales (Luria model) or four scales (CHC model): Sequential/*Gsm,* Simultaneous/*Gv,* and Learning/*Glr* are in both models, and Knowledge/*Gc* is only in the CHC model. For ages 7–18, four scales (Luria) or five scales (CHC) are available, with the Planning/*Gf* scale joining the aforementioned KABC-II scales. The KABC-II scales for each age level are shown in Rapid Reference 1.5. The Don't Forget box provides additional information about the KABC-II.

From the Luria perspective, the KABC-II scales correspond to learning ability, sequential processing, simultaneous processing, and planning ability. From the vantage point of the CHC model, as applied to the KABC-II, the scales measure the following Broad Abilities (Rapid Reference 1.6 on page 14 describes how the scales are conceptualized by each theoretical perspective).

The names of the KABC-II scales reflect both the Luria process it is believed to measure and its CHC Broad Ability, as indicated in Rapid Reference 1.6: Learning/*Glr,* Sequential/*Gsm,* Simultaneous/*Gv,* and Planning/*Gf.* However, the Knowledge/*Gc* scale that measures crystallized ability reflects only CHC theory, as it is specifically excluded from the Luria system.

As stated, KABC-II yields two global scores that encompass the scales: the MPI and the FCI. The MPI provides a global overview of the KABC-II scales that make up the Luria model, and the FCI offers a global summary of the scales constituting the CHC model. The primary difference between the MPI and the FCI is the inclusion of the Knowledge/*Gc* scale in the FCI and its exclusion from the MPI (see the Don't Forget box). The inclusion of crystallized abilities in the global score yielded by the CHC model (FCI) offers an alternative way of view-

Rapid Reference 1.5

Number of KABC-II Scales at Each Age Level

Age 3	Ages 4–6	Ages 7–18
MPI, FCI, or NVI *(only global scales are provided at age 3)*	MPI, FCI, or NVI Learning/*Glr* Sequential/*Gsm* Simultaneous/*Gv* Knowledge/*Gc*	MPI, FCI, or NVI Learning/*Glr* Sequential/*Gsm* Simultaneous/*Gv* Planning/*Gf* Knowledge/*Gc*

Note. The MPI from the Luria system *excludes* Knowledge/*Gc* subtests (age 3) and scale (ages 4–18). The FCI of the CHC system *includes* the Knowledge/*Gc* subtests (age 3) and scale (ages 4–18).

DON'T FORGET

Basic Information about the KABC-II

Author: Alan S. Kaufman and Nadeen L. Kaufman

Publication date: 2004

What the test measures: learning (long-term retrieval), sequential processing (short-term memory), simultaneous processing (visualization), planning (fluid ability), and verbal knowledge (crystallized ability)

Age range: 3 to 18 years

Administration time: Core battery: from 25–35 minutes at age 3 to 50–70 minutes at ages 13–18; Expanded battery: from 35–55 minutes at age 3 to 75–100 minutes at ages 13–18

Qualification of examiners: Graduate- or professional-level training in psychological assessment

Publisher: AGS Publishing
4201 Woodland Road
Circle Pines, Minnesota
55014-1796
Ordering phone: 800-328-2560
http://www.agsnet.com

Price (from 2004 catalog):
KABC-II Kit:
Includes four easels, one manual, all necessary stimulus and manipulative materials, 25 record forms, and soft-sided briefcase. $724.99
KABC-II Computer ASSIST ™ Scoring Software $199.99

ing children's cognitive abilities that is founded in a theory that has gained much popularity among assessment-oriented psychologists (Flanagan et al., 2000; McGrew & Flanagan, 1998) and is consistent with several other Kaufman tests (Kaufman & Kaufman, 1990, 1993, 2004a) and with traditional (Wechsler-Binet) views of cognitive ability.

In addition to the MPI and FCI, and the five scales, the KABC-II has a Nonverbal Scale, composed of subtests that may be administered in pan-

DON'T FORGET

Differences Between the KABC-II's Global Constructs

- The Mental Processing Index (MPI) measures general mental processing ability on the KABC-II from the Luria perspective and *excludes* measures of acquired knowledge.
- The Fluid-Crystallized Index (FCI) measures general cognitive ability on the KABC-II from the Cattell-Horn-Carroll (CHC) perspective and *includes* measures of acquired knowledge (crystallized ability).

Rapid Reference 1.6

Definitions of Luria and CHC Terms

KABC-II Scale	Luria Term	CHC Term
Learning/*Glr*	**Learning Ability**	**Long-Term Storage and Retrieval (*Glr*)**
	Reflects an integration of the processes associated with all three blocks, placing a premium on the attention-concentration processes that are in the domain of block 1, but also requiring block 2 coding processes and block 3 strategy generation to learn and retain the new information with efficiency. Sequential and simultaneous processing are associated primarily with Luria's block 2 and pertain to either a step-by-step (sequential) or holistic (simultaneous) processing of information.	Storing and efficiently retrieving newly learned, or previously learned, information.
Sequential/*Gsm*	**Sequential Processing**	**Short-Term Memory (*Gsm*)**
	Measures the kind of coding function that Luria labeled "successive" and involves arranging input in sequential or serial order to solve a problem, where each idea is linearly and temporally related to the preceding one.	Taking in and holding information, and then using it within a few seconds.
Simultaneous/*Gv*	**Simultaneous Processing**	**Visual Processing (*Gv*)**
	Measures the second type, or simultaneous, coding function associated with block 2. For its tasks, the input has to be integrated and synthesized simultaneously (holistically), usually spatially, to produce the appropriate solution. As mentioned earlier, the KABC-II measure of simultaneous processing deliberately blends Luria's block 2 and block 3 to enhance the complexity of the simultaneous syntheses that are required.	Perceiving, storing, manipulating, and thinking with visual patterns.

Planning/*Gf*	**Planning Ability**	**Fluid Reasoning (*Gf*)**
	Measures the high-level, decision-making, executive processes associated with block 3. However, as Reitan (1988) states, "block 3 is involved in no sensory, motor, perceptual, or speech functions and is devoted exclusively to analysis, planning, and organization of programs for behavior" (p. 335). Because any cognitive task involves perception of sensory input and either a motor or verbal response, the KABC-II measure of planning ability necessarily requires functions associated with the other two blocks as well.	Solving novel problems by using reasoning abilities such as induction and deduction.
Knowledge/*Gc*	**(This scale is not included in the Luria model)**	**Crystallized Ability (*Gc*)**
		Demonstrating the breadth and depth of knowledge acquired from one's culture.

Note: Knowledge/*Gc* is included in the CHC system for the computation of the FCI, but it is *excluded* from the Luria system for the computation of the MPI. The Planning/*Gf* scale is for ages 7–18 only. All other scales are for ages 4–18. Only the MPI and FCI are offered for three-year-olds.

tomime and responded to motorically. The Nonverbal Scale permits valid assessment of children who are hearing impaired, have limited English proficiency, have moderate to severe speech or language impairments, and have other disabilities that make the Core Battery unsuitable. Rapid Reference 1.7 lists the subtests that compose the Nonverbal scale. This special scale comprises a mixture of Core and supplementary subtests for all age groups.

The KABC-II includes two batteries: a Core and an Expanded. The Expanded battery offers supplementary subtests to increase the breadth of the constructs that are measured by the Core battery, to follow up hypotheses, and to provide a comparison of the child's initial learning and delayed recall of new learning. Scores earned on the supplementary subtests do *not* contribute to the child's standard scores on any KABC-II scale (except for the special Nonverbal scale). Rapid Reference 1.8 presents the Core and Expanded battery for each age group. The

Rapid Reference 1.7

Subtests Comprising the KABC-II Nonverbal Scale

	Ages 3–4	Age 5	Age 6	Ages 7–18
Hand Movements	×	×	×	×
Triangles	×	×	×	×
Conceptual Thinking	×	×	×	
Face Recognition	×	×		
Pattern Reasoning		×	×	×
Story Completion			×	×
Block Counting				×
Total number of subtests	4	5	5	5

Note. The Nonverbal subtests include both Core and Supplementary subtests.

scale structure of the KABC-II for age 3 and ages 4–6 differs from the structure for children between the ages of 7 and 18, and the subtest composition for ages 4, 5, and 6 differs slightly, reflecting the rapid developmental changes in cognition at about age 5. There is also a slight change for ages 7–12 versus 13–18. In both cases, the different subtest makeup concerns the Simultaneous/*Gv* scale. Descriptions of the 18 subtests are presented in Rapid Reference 1.9.

KABC-II Standard Scores and Scaled Scores

The KABC-II's two global scores, the MPI and FCI, both are standard scores with a mean of 100 and a standard deviation (SD) of 15. However, only *one* of these two global scores is computed and interpreted for any child or adolescent who is evaluated, based on the examiner's choice of the Luria or CHC model for that individual. Like the MPI and FCI, the KABC-II Nonverbal Index is also a standard score with a mean of 100 and SD of 15.

The five additional KABC-II scales offered for ages 4–18 each have a mean of 100 and SD of 15 (but only the MPI and FCI are offered at age 3). All KABC-II subtests have a mean of 10 and SD of 3. The Core subtest standard scores contribute to the scales, but the Supplementary scaled scores do not (except for the special Nonverbal scale).

Rapid Reference 1.8

Categorization of KABC-II Subtests as Core or Supplementary

	Age 3		Age 4		Age 5		Age 6		Ages 7–12		Ages 13–18	
Scale/Subtests	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**	**C**	**S**
Sequential/*Gsm*												
Word Order	WO		WO		WO		WO		WO		WO	
Number Recall		NR	NR		NR		NR		NR		NR	
Hand Movements				HM		HM		HM		HM		HM
Simultaneous/*Gv*												
Rover							Ro		Ro		Ro	
Triangles	T		T		T		T		T			T
Conceptual Thinking	CT		CT		CT		CT					
Face Recognition	FR		FR			FR						
Gestalt Closure		GC		GC		GC		GC		GC		GC
Block Counting						BC		BC		BC	BC	
Planning/*Gf*												
Pattern Reasoning[a]					PR		PR		PR		PR	
Story Completion[a]								SC	SC		SC	
Learning/*Glr*												
Atlantis	A		A		A		A		A		A	
Atlantis Delayed						AD		AD		AD		AD
Rebus			R		R		R		R		R	
Rebus Delayed								RD		RD		RD
Knowledge/*Gc*												
Riddles	Ri		Ri		Ri		Ri		Ri		Ri	
Expressive Vocabulary	EV		EV		EV		EV			EV		EV
Verbal Knowledge		VK		VK		VK		VK	VK		VK	

Note. A subtest's abbreviation in the C column indicates that it is a Core subtest for that particular age, and a subtest's abbreviation in the S column indicates that it is a Supplementary subtest for that particular age.

[a]At ages 5–6, Pattern Reasoning and Story Completion are categorized as Simultaneous/*Gv* subtests.

Rapid Reference 1.9

Description of KABC-II Subtests

Scale/Subtests	Description
Sequential/*Gsm*	
Word Order	The child touches a series of silhouettes of common objects in the same order as the examiner said the names of the objects; more difficult items include an interference task (color naming) between the stimulus and response.
Number Recall	The child repeats a series of numbers in the same sequence as the examiner said them, with series ranging in length from two to nine numbers; the numbers are single digits, except that 10 is used instead of 7 to ensure that all numbers are one syllable.
Hand Movements	The child copies the examiner's precise sequence of taps on the table with the fist, palm, or side of the hand.
Simultaneous/*Gv*	
Rover	The child moves a toy dog to a bone on a checkerboard-like grid that contains obstacles (rocks and weeds) and tries to find the "quickest" path—the one that takes the fewest moves.
Triangles	For most items, the child assembles several identical rubber triangles (blue on one side, yellow on the other) to match a picture of an abstract design; for easier items, the child assembles a different set of colorful plastic shapes to match a model constructed by the examiner.
Conceptual Thinking	The child views a set of four or five pictures and identifies the one picture that does not belong with the others; some items present meaningful stimuli and others use abstract stimuli.
Face Recognition	The child attends closely to photographs of one or two faces that are exposed briefly and then selects the correct face or faces, shown in a different pose, from a group photograph.
Gestalt Closure	The child mentally fills in the gaps in a partially completed inkblot drawing and names (or describes) the object or action depicted in the drawing.
Block Counting	The child counts the exact number of blocks in various pictures of stacks of blocks; the stacks are configured

	such that one or more blocks is hidden or partially hidden from view.
Planning/*Gf*	
Pattern Reasoning[a]	The child is shown a series of stimuli that form a logical, linear pattern, but one stimulus is missing; the child completes the pattern by selecting the correct stimulus from an array of four to six options at the bottom of the page (most stimuli are abstract, geometric shapes, but some easy items use meaningful stimuli).
Story Completion[a]	The child is shown a row of pictures that tell a story, but some of the pictures are missing. The child is given a set of pictures, selects only the ones that are needed to complete the story, and places the missing pictures in their correct location.
Learning/*Glr*	
Atlantis	The examiner teaches the child the nonsense names for fanciful pictures of fish, plants, and shells; the child demonstrates learning by pointing to each picture (out of an array of pictures) when it is named.
Atlantis Delayed	The child demonstrates delayed recall of paired associations learned about 15–25 minutes earlier during Atlantis by pointing to the picture of the fish, plant, or shell that is named by the examiner.
Rebus Learning	The examiner teaches the child the word or concept associated with each particular rebus (drawing), and the child then "reads" aloud phrases and sentences composed of these rebuses.
Rebus Learning Delayed	The child demonstrates delayed recall of paired associations learned about 15–25 minutes earlier during Rebus by "reading" phrases and sentences composed of those same rebuses.
Knowledge/*Gc*	
Riddles	The examiner provides several characteristics of a concrete or abstract verbal concept, and the child has to point to it (early items) or name it (later items).
Expressive Vocabulary	The child provides the name of a pictured object.
Verbal Knowledge	The child selects from an array of six pictures the one that corresponds to a vocabulary word or answers a general information question.

Note. Descriptions are adapted from the *KABC-II Manual* (Kaufman & Kaufman, 2004a).

[a]At ages 5–6, Pattern Reasoning and Story Completion are categorized as Simultaneous/*Gv* subtests.

CHANGES FROM K-ABC TO KABC-II

The K-ABC underwent major revision—structurally and conceptually. The K-ABC's theoretical foundation in Luria's (1966) sequential-simultaneous processing theory and cerebral specialization theory was modified and supplemented in the second edition. Unlike the K-ABC, the KABC-II was founded in Luria's *three* blocks and added a second theory to its foundation—CHC—giving examiners more flexibility in interpretation. To create the dual theoretical basis, 10 new subtests were created and 8 old ones were removed, while 8 original K-ABC subtests were retained. Because of the extension of the KABC-II age range to 18 years 11 months, virtually all retained subtests include many new difficult items to ensure adequate ceilings for bright adolescents. The strong ceilings are evident at all ages: The MPI, FCI, and Nonverbal Index (NVI) all yield high scores of 160, which is 4 SDs above the normative mean of 100. The five individual indexes also have extremely high ceilings, yielding high scores ranging from 154 to 160 across all age groups. Table 1.1 shows the ceilings for the KABC-II indexes. Rapid Reference 1.10 lists the subtest changes from the K-ABC to KABC-II, and Rapid Reference 1.11 lists the correlations between the KABC-II and the K-ABC subtests of the same name. The Don't Forget box lists some of the other specific changes made in the revision of the K-ABC.

DON'T FORGET

Changes from the K-ABC to the KABC-II

- The KABC-II features dual theoretical foundations, including both Luria and CHC theories.
- Age range was expanded to 3–18 years.
- Directions to some retained subtests were improved for clarity.
- New concrete stimuli and easy items were added to improve the floor of Triangles for young children.
- New easy picture items were added to improve the floor of Riddles for young children.
- Many new Face Recognition items were added, and some distracting background details were removed from retained items to help ensure that the task focuses specifically on recognition of the face.
- Hand Movements and Gestalt Closure were retained from the K-ABC but only as supplementary KABC-II subtests.
- Expressive Vocabulary was a preschool-level subtest on the K-ABC and was expanded to span the entire 3–18 age range on the KABC-II.
- On Word Order, explanation of the color interference task was improved, and an additional sample item was added to avoid penalizing a child who does not catch on immediately to the notion of interference.

Table 1.1 KABC-II Index Ceilings (highest possible standard score)

Age	*Gsm*	*Gv*	*Glr*	*Gf*	*Gc*	FCI and MPI	NVI
13–18	158	160	160	160	160	160	160
10–12	158	160	160	160	160	160	160
7–9	158	157	160	160	160	160	160
6	158	158	160		154	160	159
5	158	159	160		154	160	160
4	158	160	160		154	160	160
3						160	160

Note. Data are from the *KABC-II manual* (Kaufman & Kaufman, 2004a), Table D.2.

Rapid Reference 1.10

Subtest Changes from the K-ABC to KABC-II

Subtests Retained from the K-ABC	Subtests New to the KABC-II	Subtests Eliminated from the K-ABC
Word Order	Atlantis	Magic Window
Number Recall	Rebus	Spatial Memory
Triangles	Atlantis Delayed	Matrix Analogies
Face Recognition	Rebus Delayed	Photo Series
Riddles	Pattern Reasoning	Faces and Places
Hand Movements	Story Completion	Arithmetic
Gestalt Closure	Block Counting	Reading/Decoding
Expressive Vocabulary	Rover	Reading/Understanding
	Conceptual Thinking	
	Verbal Knowledge	

Note. Adapted from Table 1.1 of the *KABC-II technical manual* (Kaufman & Kaufman, 2004).

STANDARDIZATION AND PSYCHOMETRIC PROPERTIES OF KABC-II

The following sections discuss the standardization, reliability, and validity of the KABC-II.

Standardization

The KABC-II was standardized on a sample of 3,025 children who were chosen to match closely the 2001 U.S. Census data on the variables of age, gender, geographic region, ethnicity, and parental education. The standardization sample was

Rapid Reference 1.11

Correlations between KABC-II and the K-ABC Subtests of the Same Name

Subtest	Corrected r: Ages 3–5	Corrected r: Ages 8–12
Word Order	.65	.70
Number Recall	.69	.85
Triangles[a]	.55	.73
Face Recognition[b]	.45	
Riddles[c]	.80	.85
Hand Movements[d]	.58	.52
Gestalt Closure	.69	.66
Expressive Vocabulary[e]	.78	

Note. Ten subtests are new to the KABC-II, and eight of the original K-ABC subtests were eliminated in the KABC-II. All values were corrected for the variability of the norm group, based on the standard deviation obtained on the KABC-II, using the variability correction of Cohen, Cohen, West, and Aiken (2003, p. 58). *N*s varied across individual subtests and ranged from 55 to 74 for ages 3–5, and the *N* was 48 for ages 8–12. Coefficients are from the *KABC-II technical manual* (Tables 8.15 and 8.16).

[a]New concrete stimuli and easy items were added to improve the floor of Triangles for young children.

[b]Face Recognition is only administered up to age 5 on the KABC-II and K-ABC.

[c]New easy picture items were added to improve the floor of Riddles for young children.

[d]Hand Movements and Gestalt Closure were retained from the K-ABC but only as supplementary KABC-II subtests.

[e]Expressive Vocabulary was a preschool-level subtest on the K-ABC and was expanded to span the entire 3–18 age range on the KABC-II.

divided into 18 age groups, each composed of 100–200 children. The sample was split approximately equally between boys and girls.

Reliability

The reliability and validity information are presented in the KABC-II manual (Kaufman & Kaufman, 2004a) and are summarized in Rapid Reference 1.12. The average internal consistency coefficients are .95 for the MPI at both ages 3–6 and ages 7–18, and for the FCI they are .96 for ages 3–6 and .97 for ages 7–18. Internal

Rapid Reference 1.12

KABC-II Reliability

Scale/Subtest	Internal Reliability Ages 3–6	Internal Reliability Ages 7–18	Test-Retest Reliability Ages 3–6	Test-Retest Reliability Ages 7–18
Sequential/*Gsm*	**.91**	**.89**	**.79**	**.80**
Number Recall	.85	.79	.69	.82
Word Order	.87	.87	.72	.72
Hand Movements	.69	.78	.50	.60
Simultaneous/*Gv*	**.92**	**.88**	**.74**	**.77**
Block Counting	.90	.87		.63
Conceptual Thinking	.80		.55	
Face Recognition	.75		.56	
Rover	.83	.80		.64
Triangles	.86	.87	.79	.83
Gestalt Closure	.74	.74	.70	.81
Learning/*Glr*	**.91**	**.93**	**.79**	**.79**
Atlantis	.83	.86	.73	.70
Rebus	.92	.93	.70	.79
Delayed Recall	.82	.90		.80
Planning/*Gf*		**.88**		**.81**
Pattern Reasoning[c]	.89	.90		.74
Story Completion[c]	.82	.77		.72
Knowledge/*Gc*	**.91**	**.92**	**.93**	**.92**
Expressive Vocabulary	.84	.86	.86	.89
Riddles	.85	.86	.80	.89
Verbal Knowledge	.85	.89	.81	.83
MPI	**.95**	**.95**	**.86**	**.90**
FCI	**.96**	**.97**	**.90**	**.93**
NVI	**.90**	**.92**	**.72**	**.87**

Note. Scale reliabilities are in bold.

[a]Reliabilities for scales and global scales were computed using the formula provided by Nunnally (1978, p. 248).

[b]Using Fisher's *z* transformation.

[c]On Simultaneous/*Gv* scale at ages 5–6.

consistency values for individual subtests ranged from .69 for Hand Movements to .92 on Rebus (for ages 3–6), and for the 7–18 age group internal consistency values ranged from .74 on Gestalt Closure to .93 on Rebus. The median internal consistency value for the individual subtests was .84 for ages 3–6 and .86 for ages 7–18.

The KABC-II is a fairly stable instrument with average test-retest coefficients of .86, .89, and .91 for the MPI at ages 3–5, 7–12, and 13–18, respectively. Average test-retest coefficients for the FCI were .90, .91, and .94 at ages 3–5, 7–12, and 13–18, respectively (see Rapid Reference 1.12 for a reliability summary that includes internal consistency and stability values). Across the three broad age groups, the ranges of the stability values of Learning/*Glr* (.76–.81), Sequential/*Gsm* (.79–.80), Simultaneous/*Gv* (.74–.78), Planning/*Gf* (.80–.82), and Knowledge/*Gc* (.88–.95) denote adequate stability. The Simultaneous/*Gv* emerged as the least stable of all the composite scores.

The largest practice effects (i.e., score increases from first testing to second) were about 14–15 points for the Learning/*Glr* scale at ages 7–18. The large gains on this scale are not surprising given that the nature of the tasks demands that children learn new material, so if children are tested again once they have learned the material, they have a distinct advantage over the first time they were tested. Indeed, the practice effect of about 1 SD over a month's time strongly suggests that the children really learned the material in the first place and are reflecting a certain amount of retention over time. That kind of long-term retention is consistent with the notion of delayed recall that was introduced with the original WJ (Woodcock & Johnson, 1977). Children and adults were expected to retain the paired associate learning over time; to measure delayed recall on the original WJ, examiners were instructed to administer the pertinent subtests 1–8 days later (on the WJ III, examiners are told to give the delayed tasks 30 minutes to 8 days later).

At ages 7–18, Planning/*Gf* also had a relatively large practice effect (10–11 points), whereas Simultaneous/*Gv* showed a moderate effect (7–9 points), and both Sequential/*Gsm* (–1 to 1 point) and Knowledge/*Gc* (3 to 3.5 points) had small effects. These results are entirely consistent with the differential practice effects known for decades about Wechsler's Performance IQ versus Verbal IQ (Kaufman, 1994b). On the WISC-III, for example, Performance IQ gains averaged 12.5 points as opposed to 2.5 points for Verbal IQ. The KABC-II Planning/*Gf* and Simultaneous/*Gv* tasks—like Wechsler's Performance subtests—are novel tasks. However, they only retain their novelty the first time around; even several months later, the tasks have lost their novelty and children will perform markedly better.

At ages 3–5, practice effects for all scales tended to be small to moderate (2–6 points), but the same pattern observed for older children on the KABC-II (and on

Rapid Reference 1.13

Practice Effects for the Separate KABC-II Scaled Scores: Subtests with Relatively Large Gains from Test to Retest

Subtest	Ages 3–5	Ages 7–12	Ages 13–18
Face Recognition	1.0	—	—
Rover	—	1.8	1.6
Triangles	0.8	1.2	1.1
Gestalt Closure	1.1	1.6	1.5
Atlantis	1.2	3.4	3.3
Rebus	0.8	1.7	1.4
Story Completion	—	2.6	2.8

Note. Relatively large gains are defined as at least 0.3 SD (a gain of at least 0.9 scaled-score points from test to retest). Data are from the *KABC-II Technical Manual* (Table 8.3). Intervals ranged from 12 to 56 days with a mean of 27 days.

Wechsler's scales for children and adults) was observed for the preschool sample: Largest practice effects were on Learning/*Glr* and Simultaneous/*Gv* (5–6 points), and smallest effects were on Sequential/*Gsm* and Knowledge/*Gc* (2–4 points).

Overall practice effects on the FCI and MPI were 10–11 points for ages 7–18 and 5–6 points for ages 3–5. These results need to be internalized by examiners, especially when testing children ages 7 and older, for whom practice effects are substantial. The advice given by Kaufman (1994a) for the Wechsler scales generalizes to the KABC-II: "Robert DeNiro said to Christopher Walken, in *The Deer Hunter,* that you just get 'one shot.' What applies to deer hunting applies to Wechsler profiles. You get one shot" (p. 31).

Rapid Reference 1.13 extends the findings on practice effects to subtest scaled scores, and the results for separate tasks are entirely consistent with the data reported for the scales in Rapid Reference 1.14. Like the Learning/*Glr* Index, the individual subtests of this scale generally had relatively large gains in scaled scores on retesting, as did the Simultaneous/*Gv* subtests. However, the largest gain was seen in Story Completion (a Planning/*Gf* subtest), which had gains of 2.6 to 2.8 points on retest. In Rapid Reference 1.13, subtests that produced relatively large gains from test to retest are featured (with large gains defined as at least 0.9 scaled score points, which equals 0.3 SD).

Rapid Reference 1.14

Practice Effects for the KABC-II Global Scales

Scale	Ages 3–5	Ages 7–12	Ages 13–18
Sequential/*Gsm*[a]	2.2	–0.8	1.1
Simultaneous/*Gv*[a]	5.0	9.2	6.6
Learning/*Glr*[a]	5.9	14.6	13.9
Planning/*Gf*	—	10.4	10.8
Knowledge/*Gc*[a]	3.9	3.3	3.4
MPI	5.9	11.9	11.3
FCI	5.3	10.3	10.3
NVI	4.8	7.9	7.8

Note. Data are from the *KABC-II technical manual* (Table 8.3). Intervals ranged from 12 to 56 days with a mean of 27 days.

[a]Ages 4–18 only.

Validity

Construct validity of the KABC-II is supported by the factor-analytic studies described in the KABC-II manual (Kaufman & Kaufman, 2004a). Results of confirmatory factor analyses (CFAs) across age levels supported different batteries at different age levels. At age 3 a single factor model is the basis for the KABC-II (although CFA did yield a distinction between the Sequential/*Gsm* subtests and the rest of the battery). At age 4 the Concept Formation subtest loaded substantially on both Knowledge/*Gc* and Simultaneous/*Gv*. This dual-loading led to a nonsignificant distinction between Knowledge/*Gc* and Simultaneous/*Gv*. Despite the findings of the CFA, the final battery separates Knowledge/*Gc* and Simultaneous/*Gv* into distinct scales on the basis of the distinct content in each of the scales. The other two factors measured at age 4, Sequential/*Gsm* and Learning/*Glr,* were well supported and distinct.

At ages 7 to 18 distinguishing Simultaneous/*Gv* and Planning/*Gf* was critical. Thus, CFA helped determine which subtests to place on Simultaneous/*Gv* and Planning/*Gf* to yield the best distinction between the factors. Combining Rover and Triangles at ages 7–12 and Rover and Block Counting at ages 13–18 produced a Simultaneous/*Gv* factor that was distinct from Planning/*Gf*. The KABC-II manual suggests that at ages 7–12 Block Counting is a more cognitively complex task and at ages 13–18 it is more purely visual. In addition, the older children, who were administered the most difficult Triangles items, required more reasoning ability than visualization to complete the task.

The main CFA statistics for evaluating how well a test's data fit a theoretical model are the *comparative fit index* (CFI) and the *root mean square error of approximation* (RMSEA). According to Hu and Bentler (1999), CFI values should be greater than .95 and RMSEA values should be less than .06 to provide evidence of good fit. For the KABC-II, values of CFI were well above the suggested cutoff of .95, with all values exceeding .99. These results were obtained for each separate age group: 4, 5–6, 7–12, and 13–18. Values above .99 were obtained in analyses that included only Core subtests and also in analyses that comprised all KABC-II subtests (Core and supplementary). Similarly, values of RMSEA were at or below cutoff of .06 for each age group, averaging about .04 to .05 (Kaufman & Kaufman, 2004a, Figures 8.1 & 8.2). Overall results of the CFA are very strongly supportive of the theory-based scale structure of the KABC-II.

In addition to factor analyses, validity of the KABC-II is further supported by correlations with the following instruments (Kaufman & Kaufman, 2004): the Wechsler Intelligence Scale for Children (third and fourth editions), the Wechsler Preschool and Primary Scale of Intelligence—third edition, the KAIT, and the WJ III. Each of the global scales of these instruments correlated strongly with the KABC-II MPI and FCI. Correlations ranged from .71 to .91 (see Rapid Reference 1.15). Rapid Reference 1.16 also shows that the KABC-II Knowledge/*Gc* scale correlated substantially higher with the verbal scales of the WJ III and

Rapid Reference 1.15

Correlations of KABC-II Full Scale IQ with Other Global Measures

Measure	KABC-II MPI	KABC-II FCI
WISC-III Full Scale IQ (*N* = 119)	.71	.77
WISC-IV Full Scale IQ (*N* = 56)	.88	.89
WPPSI-III Full Scale IQ (*N* = 36)	.76	.81
KAIT Composite (*N* = 29)	.85	.91
WJ III GIA (*N* = 86)	.77	.78

Note. All values are corrected for the variability of the standardization sample. Coefficients are from the *KABC-II technical manual* (Tables 8.17, 8.18, 8.19, 8.21, and 8.22).

Rapid Reference 1.16

Convergent/Discriminant Validity of the KABC-II: Correlations with other Cognitive Scales

	Sequential/*Gsm*	Simultaneous/*Gv*	Learning/*Glr*	Planning/*Gf*	Knowledge/*Gc*
WJ III					
Comprehension Knowledge (*Gc*)	.46	.53	.53	.57	.84
Visual Spatial (*Gv*)	.35	.51	.46	.43	.46
Fluid Reasoning (*Gf*)	.45	.59	.50	.64	.60
Processing Speed (*Gs*)	.15	.28	.21	.35	.25
Working Memory (*Gsm*)	.55	.39	.51	.44	.56
WISC-IV					
Verbal Comprehension Index (VCI)	.44	.53	.63	.57	.85
Perceptual Reasoning Index (PRI)	.22	.66	.56	.69	.60
Working Memory Index (WMI)	.71	.49	.46	.50	.65
Perceptual Speed Index (PSI)	.16	.46	.58	.56	.53

Note. All values are corrected for the variability of the standardization sample. Most values are from the *KABC-II Technical Manual* (Tables 8.17 and 8.22). Convergent validity correlations are circled.

WISC-IV than it did with the reasoning, visual spatial, and memory scales of each instrument. These patterns of correlations support the convergent and discriminant validity of the KABC-II. Chapter 5 presents a more detailed review of some validity issues, and Chapter 6 touches on the validity of the KABC-II in special populations.

To evaluate the relationship of the KABC-II scores to the key criterion of academic achievement, the KABC-II was correlated with the KTEA-II for 2,475 students between prekindergarten and grade 12 (Kaufman & Kaufman, 2004b) and with a total of 401 children on the WJ III Achievement battery, the Wechsler Individual Achievement Test—Second Edition (WIAT-II), and the Peabody Individual Achievement Test—Revised (PIAT-R; Kaufman & Kaufman, 2004a). Rapid Reference 1.17 summarizes these results for different grade levels, focusing on global scores: FCI, MPI, and total achievement standard score. For the KTEA-II, FCI correlated .79, on the average, with KTEA-II Achievement Composite, with the MPI correlating slightly lower (.75). These coefficients with the conormed KTEA-II are similar in magnitude to the mean values of .75 (FCI) and .71 (MPI) with the other achievement batteries. Values in the .70s are comparable to the *best* coefficients reported by Naglieri and Bornstein (2003) in their summary of a vast number of correlational studies between diverse cognitive and achievement batteries: "For the large studies, the ability/achievement composite correlations for the K-ABC (.74) followed by the CAS and WJ III (both .70) were top ranked" (Naglieri & Bornstein, p. 244). The WISC-III coefficients were lower (.63) in that study, although a recent correlation between WISC-IV Full Scale IQ and WIAT-II Total Achievement was substantial (.87; The Psychological Corporation, 2003, Table 5.15).

In Rapid Reference 1.18, correlations are shown between KABC-II global scores (including the NVI) and the major composites yielded by the KTEA-II Comprehensive Form for ages 4.5–6 and 7–18 years. For the younger group, the MPI was equivalent to the FCI as a correlate of KTEA-II achievement composites. For 4.5–6-year-olds, MPI correlated a bit higher with Written Language, FCI correlated a bit higher with Oral Language, and they correlated about the same with Reading, Math, and the Comprehensive Achievement Composite. For ages 7–18, FCI was consistently a higher correlate than MPI of each academic domain, as reflected in the coefficient with Comprehensive Achievement (.80 vs. 74).

For both age groups, FCI and MPI correlated lowest with Oral Language (.57–.67) and highest with Reading and Math (.67–.74). The NVI correlated with Math at almost the same level as the MPI and FCI (.65–.67 vs. .68–.71) but otherwise correlated substantially lower than MPI and FCI with other academic areas. For example, NVI correlated about .60 with Reading, whereas the other two global

Rapid Reference 1.17

Correlations between KABC-II Global Standard Scores (FCI and MPI) and Global Standard Scores on Four Major Achievement Batteries, by Grade Level

Achievement Test Global Standard Score	*N*	FCI	MPI
KTEA-II			
Pre-K to K	370	.74	.72
Grade 1	198	.78	.77
Grade 2	202	.79	.77
Grades 3–4	361	.82	.78
Grades 5–6	381	.77	.71
Grades 7–8	397	.82	.75
Grades 9–12	566	.80	.73
WJ III			
Grades 2–5	79	.70	.63
Grades 6–10	88	.79	.77
WIAT-II			
Grades 2–5	82	.72	.65
Grades 7–10	84	.87	.83
PIAT-R			
Grades 1–4	32	.67	.69
Grades 5–9	36	.73	.67
Mean *r* for KTEA-II	**2,475**	**.79**	**.75**
Mean *r* for WJ III, WIAT-II, and PIAT-R	**401**	**.75**	**.71**

Note. KTEA-II correlations are from Kaufman and Kaufman (2004b, Table 7.18). WJ-III, WIAT-II, and PIAT-R correlations are from Kaufman and Kaufman (2004a, Tables 8.23, 8.24, 8.26, 8.28, 8.29, and 8.30). All correlations are adjusted for the variability of the norms sample (SD = 15).

scores correlated about .70. Therefore, KABC-II examiners who opt to administer the Nonverbal scale need to be aware that prediction of the child's academic achievement will suffer (except for prediction of mathematics).

Nonetheless, despite the lower correlations of NVI with Achievement (relative to MPI and FCI), and correlations in the .50s and .60s with Oral Language, all of the coefficients for the KABC-II global scores shown in Rapid References

Rapid Reference 1.18

KABC-II Global Scale Correlations (including NVI) with KTEA-II Composites (ages 4.5–18 years)

KTEA-II Composite	FCI	MPI	NVI
Reading			
Ages 4.5–6	.67	.68	.57
Ages 7–18	.74	.68	.61
Math			
Ages 4.5–6	.70	.71	.65
Ages 7–18	.71	.68	.67
Written Language			
Ages 4.5–6	.67	.70	.56
Ages 7–18	.66	.62	.56
Oral Language			
Ages 4.5–6	.62	.57	.52
Ages 7–18	.67	.61	.56
Comprehensive Achievement			
Ages 4.5–6	.75	.73	.65
Ages 7–18	.80	.74	.70

Note. All correlations were corrected for the variability of the norm group, based on the standard deviation obtained on the KTEA-II, using the variability correction of Cohen et al. (2003, p. 58). Data are adapted from Kaufman and Kaufman (2004b).

1.7 and 1.8 on pages 16 and 17 compare favorably with the values yielded by global scores on other tests (Naglieri & Bornstein, 2003) and reflect strong support for the KABC-II's criterion-related validity.

Additional discussion of the interface between the KABC-II and KTEA-II is provided in Chapter 6 in the section "Integrating the KABC-II and KTEA-II," including correlations between the KABC-II Scale Indexes and KTEA-II Composites.

TEST YOURSELF

1. **The key difference between the KABC-II's two global scores is that the MPI (Luria's theory) *excludes* measures of acquired knowledge, whereas the FCI (CHC theory) *includes* measures of acquired knowledge.** True or False?
2. **The KABC-II includes all of the following scales except _____.**
   (a) Sequential/*Gsm*
   (b) Simultaneous/*Gv*
   (c) Learning/*Glr*
   (d) Knowledge/*Gc*
   (e) Processing Speed/*Gs*
   (f) Planning/*Gf*
3. **At ages 7–18 the KABC-II yields five Broad Ability scales for the CHC model; at ages 4–6 it yields four Broad Ability scales for the CHC model. How many Broad Ability scales does the KABC-II yield for the CHC model at age 3?**
4. **Scores earned on the supplementary subtests do *not* contribute to the child's standard scores on any KABC-II scale (except for the special Nonverbal scale).** True or False?
5. **At ages 7–18, the largest practice effects (i.e., score increases from first testing to second) were about 14–15 points for what scale?**
   (a) Simultaneous/*Gv*
   (b) Knowledge/*Gc*
   (c) Learning/*Glr*
   (d) Sequential/*Gsm*
6. **For ages 7–18, MPI (without Knowledge/*Gc*) was consistently a higher correlate than FCI (with Knowledge/*Gc*) of each KTEA-II academic domain.** True or False?
7. **The KABC-II Knowledge/*Gc* scale correlated the highest with which scales of the WJ III and WISC-IV?**
   (a) Reasoning scales
   (b) Visual spatial scales
   (c) Memory scales
   (d) Verbal scales

Answers: 1. True; 2. e; 3. None—only a global score (FCI, MPI, or NVI) is produced; 4. True; 5. c; 6. False; 7. d