



## **The Gesell Developmental Observation-Revised: An Overview**

Gesell Institute of Child Development has been associated with understanding how children grow and learn since 1950. A pioneer in the field of child growth and development, Arnold Gesell, PhD, MD, theorized that behavior is a function of structure, and that humans develop in a patterned, predictable way. His pioneering research made notable use of the then new cinematographic technologies to document the developmental stages of over 10,000 children in terms of verbal, motor, social, emotional, and cognitive growth.

Dr. Gesell first developed an assessment of human development and published the widely acclaimed *The Mental Growth of the Pre-School Child: A Psychological Outline of Normal Development from Birth to the Sixth Year, Including a System of Developmental Diagnosis, Illustrated with Two Hundred Action Photographs* which included the Schedules of Human Development in 1925. The Gesell Schedules were used by many to understand how an infant develops during the early years of life through school age. The original Gesell assessment, known today as the Gesell Developmental Observation (GDO) was published with original data in 1925, and updated in 1940, 1965, 1979, and most recently in 2011.

### **What is the Gesell Developmental Observation-Revised?**

The Gesell Developmental Observation-Revised (GDO-R) is a comprehensive developmental assessment system that assists parents, educators, and other professionals in understanding characteristics of child behavior in relation to typical growth patterns. Gesell assessments have been used as standard measures of child growth and development since the introduction of the initial scales in 1925. Long used by pediatricians and recently revised and updated via the 2008-2010 GDO Study, Gesell materials and training focus on direct observation to evaluate a child's cognitive, language, motor and social-emotional development in five strands: Developmental, Letter/Numbers, Language/Comprehension, Visual/Spatial, and Social/Emotional/Adaptive. A child's performance on each strand corresponds to a Performance Level Rating (Age Appropriate, Emerging or Concern). This allows for an Overall Performance Level rating on the GDO-R while guiding the examiner toward customizing curricula and/or recommending further diagnostic evaluation, if needed. The GDO-R consists of an Examiner's Manual, a standardized Examiner's Script (with visual stimuli cards), Child Recording Form and Teacher and Parent/Guardian Questionnaires. It is designed to be used with children from 2½ to 9 years of age.

A trained examiner administers the standardized protocol by observing and recording a child's performance on all tasks and comparing them with data collected from typically developing

age-matched peers. In addition, the examiner also considers the child's processes, organization, overt behavior, and verbalizations in order to determine Developmental Age (relative to chronological age).

### **How does the Gesell Developmental Observation-Revised differ from other instruments?**

Unlike tests that assess and quantify I.Q., special needs, or specific academic performance skills, the Gesell Developmental Observation-Revised measures a child's behavior through direct observation. A sampling of behavior from various areas of development are observed and compared with data collected from typically developing age-matched peers. Unlike any other assessment of its kind, the GDO-R provides a Developmental Age to help educators and parents know a child's behavior in relation to typical growth patterns. There are no right or wrong answers on the GDO-R, since it is concerned with the individual child's response in relation to the developmental continuum. The child-friendly tasks are specifically designed to allow the child to feel successful within his/her individual developmental level.

Additionally, Gesell Institute offers comprehensive professional training and technical assistance not offered with other data-driven instruments. Not only do educators who attend Gesell workshops learn how to use the GDO-R to determine the Developmental Age of their students, but they can now determine Performance Level Ratings using qualitative and quantitative rubrics which flag any child who may need further evaluation in one or more areas. A critical component of the training workshop includes an in-depth presentation of child behavior and the process of growth and learning. Live demonstrations of GDO-R assessments offer participants a chance to observe and score using real-time scenarios.

### **Why is developmental screening important?**

Children are individuals. Even those of the same chronological age differ remarkably from one another, each experiencing growth and development in a unique way and at an individualized pace. Developmental screening is the entry point for an integrated program of screening, assessment and intervention services. The Gesell Early Screener (GES), published in September 2011, is a developmental screening instrument which includes selected tasks derived from the GDO-R. The Gesell Early Screener (GES) provides a quick evaluation of a child's developmental capacities in four domains and identifies children who may benefit from further assessment in one or more areas. The GES does not, however, provide a Developmental Age. For more information, [click here](#).

### **What does the Gesell Developmental Observation-Revised measure?**

The multi-dimensional GDO-R assessment system measures the following critical areas of development, and also monitors the *process* a child uses while responding to the various tasks. For valid strand scoring, and use of Performance Level Ratings, all tasks within the strand must be administered. To use the auto-calculating version of the GDO-R Strand Scoring Worksheet,

click here.

GDO-R Strands and Tasks Measured			
<b>Strand A Developmental</b>	<ul style="list-style-type: none"> <li>• Hand-eye coordination</li> <li>• Visual tracking and integration</li> <li>• Fine motor skills</li> <li>• Large motor skills</li> <li>• Overt Behavior</li> </ul>	<b>Strand B Letters/Numbers</b>	<ul style="list-style-type: none"> <li>• Visual perception</li> <li>• Writing Name, Numbers</li> <li>• Familiarity with letters and numbers</li> </ul>
<b>Strand C Language/Comprehension</b>	<ul style="list-style-type: none"> <li>• Sentence structure</li> <li>• Semantics</li> <li>• Vocabulary</li> <li>• Ability to express self verbally</li> <li>• Verbal classification skills</li> <li>• Ability to understand what is said</li> </ul>	<b>Strand D Visual/Spatial Discrimination</b>	<ul style="list-style-type: none"> <li>• Depth perception</li> <li>• Visual discrimination</li> <li>• Visual motor integration</li> </ul>
		<b>Strand E Social Behavior, Emotional Development and Adaptive Skills</b>	<ul style="list-style-type: none"> <li>• Social interaction with peers/adults</li> <li>• Self-regulation</li> <li>• Self-help skills</li> </ul>

### What is the purpose of the Gesell Developmental Observation-Revised?

The primary purpose of Gesell Developmental Observation-Revised is to observe a child's overall responses to a range of developmental and academic tasks in order to identify where he/she is functioning along the continuous progression of growth and development. The GDO-R results in a Developmental Age (Strand A) that may be equal to, older, or younger than a child's chronological age. The GDO-R also results in Performance Level Ratings (Age Appropriate, Emerging or Concern) for Strands A, B, C, D and E, as well as an Overall Performance Level rating.

Knowing the process and products that are typical of growth and development provides educators with a wealth of information. Observations that reveal atypical patterns of behavior, or a Performance Level Rating of *Concern* may indicate the need for further evaluation.

In addition, parents who understand and respect developmental stages and behaviors can set more appropriate and realistic expectations for their children. Appropriate experiences that match developmental age give children the best opportunities to learn well without excessive stress, both in the classroom and at home.

Given at regular intervals (every six months), the GDO-R can monitor a child's growth over time, allowing teachers and parents to better understand a child's individual growth pattern. Periodic re-assessment assists educators in documenting any inconsistencies that might interfere with a child's learning.

### **What do teachers like about the Gesell Developmental Observation-Revised?**

- Easy to administer in about 30-45 minutes
- Guarantees opportunities for success for all children by scaffolding tasks and developmental responses
- Provides an accurate profile of each child's development and associated abilities across five strands
- Provides a Developmental Age, Performance Level Ratings of Age (Appropriate, Emerging, or Concern) for each strand, and one Overall Performance Level
- Measures Social/Emotional/Adaptive development using Teacher and Parent/Guardian Questionnaires (consumables)
- Provides meaningful information to share with parents in a user-friendly format (Summary Profile Form)
- Updated Child Recording Form includes perforated child and examiner recording pages (consumable)
- Spiral bound Examiner's Script includes visual stimuli cards and standardized script
- Current psychometric data compiled in a *Technical Report*
- Meets the government mandates for initial assessment of each child
- Offers ability to monitor a child's growth over time through regular interval assessment
- Flags children who may need additional diagnostic evaluation

## What are the components of the Gesell Developmental Observation-Revised?

There are eight core components of the GDO-R:

<b>GDO-R Child Recording Form (CRF)</b>	The CRF contains all of the pages necessary for the examiner to record the child's responses to all tasks. Four perforated pages can be easily removed for the child's work, and for the Summary Profile Form. Also, the CRF includes the TQ/PQ Recording Chart for scoring the Social/Emotional/Adaptive subscales.
<b>GDO-R Summary Profile Form</b>	The Summary Profile Form provides a summary of a child's scores and is intended to facilitate communication between parents and teachers. It also provides important documentation about the child's developmental functioning.
<b>GDO-R Strand Scoring Worksheet (SSW)</b>	The Strand Scoring Worksheet guides the examiner through the calculations necessary for strand scoring in Strands B, C, D. A hardcopy is available in the Appendix of the Examiner's Manual, as well as an auto-calculating version here.
<b>Teacher Questionnaire (TQ)</b>	The TQ allows the teacher to record social, emotional and adaptive behavior observed in the classroom. For example, the TQ also documents how, where, and with whom the child plays most often.
<b>Parent/Guardian Questionnaire (PQ)</b>	The PQ collects information about the child's prenatal and early health history as well as important social, emotional, and adaptive behavior observed by the family and caregivers in the home.
<b>GDO-R Examiner's Manual</b>	The Examiner's Manual contains information about the rationale, theory, and development of the GDO-R. It also provides specific information about the administration, scoring, and interpretation of all GDO-R tasks.
<b>GDO-R Examiner's Script</b>	The Examiner's Script provides the standardized instructions for administration of the GDO-R. It includes visual stimuli cards, is spiral bound and sequenced for efficient administration and enhanced organization.
<b>Manipulatives</b>	The GDO-R kit includes 10 one-inch red cubes, one larger red cube and red cylinder, a form board with three puzzle pieces, color form matching shapes, a beanbag, a small jar with pellets, Right and Left task cards and Visual III cards. The Copy Forms task cards, Letter/Number card, Color Forms card and Visual I cards are embedded in the Examiner's Script.

## What tasks are part of the GDO-R?

The GDO-R consists of the following 20 tasks plus Overt Behavior and parent/teacher measures; subsets of which are administered according to the child's age.

GDO-R Tasks	
<ul style="list-style-type: none"> <li>• Cubes</li> <li>• Interview</li> <li>• Name and Numbers</li> <li>• Copy Forms</li> <li>• Incomplete Man</li> <li>• Right and Left</li> <li>• Visual I</li> <li>• Visual III</li> <li>• Naming Animals</li> <li>• Interests</li> <li>• Prepositions</li> <li>• Color Forms</li> </ul>	<ul style="list-style-type: none"> <li>• Digit Repetition</li> <li>• Comprehension Questions</li> <li>• Three-Hole Form Board</li> <li>• Action Agents</li> <li>• Identifying Letters/Numbers</li> <li>• Numeracy                             <ul style="list-style-type: none"> <li>○ <i>Counting</i></li> <li>○ <i>One-to-One Correspondence</i></li> <li>○ <i>Conservation</i></li> <li>○ <i>Calculations</i></li> </ul> </li> <li>• Fine Motor</li> <li>• Gross Motor</li> <li>• Overt Behavior</li> </ul>
<ul style="list-style-type: none"> <li>• Teacher Questionnaire</li> <li>• Parent/Guardian Questionnaire</li> </ul>	

## What does each task measure?

**Cubes:** This set of tasks provides information about horizontal and visual perception, fine motor coordination, attention span, pre-mathematical skills, short-term and visual memory, and spatial judgment.

**Interview:** Answers to the series of questions in this section reveal a child's speech and language skills, as well as the ability to recall everyday experiences. Responses provide a glimpse of the child's cognitive organizational skills, ability to stay on task, and ability to follow directions.

**Name and Numbers/Copy Forms:** This set of tasks examines a child's competence in integrating visual information with motor abilities, visual tracking skills, and discrimination abilities. The size, shape, and organization of the products indicate maturity in fine motor ability, organizational skills, awareness of detail, visual perceptions, ability to execute angles, and overall eye-hand coordination. Skills in the various tasks are associated with handwriting, reading comprehension, and ability to recognize and recall letters and numbers.

**Incomplete Man:** This task requires a child to add missing symmetrical body parts to a given drawing. It measures fine motor skill, perceptual awareness, balance, symmetry, and spontaneous task completion.

**Right and Left:** This task involves the overall understanding of right and left, using a series of commands that requires a child to identify body parts, right/left orientation, and mirror images. It is a developmental task used to assess children's spatial orientation, auditory processing, and attention and response patterns.

**Visual I:** This visual discrimination task measures understanding of left to right directionality, visual discrimination in matching forms, the ability to sustain, to find one's place repeatedly, and to carry out directions. This area relates to pre-reading and reading readiness activities.

**Visual III:** This task requires a child to recall a series of abstract designs and then reproduce them on paper. It measures a child's short-term visual memory and may help to provide indicators of academic performance in the areas of spelling, reading, comprehension, and handwriting.

**Naming Animals:** Responses provide information about a child's level of expressive and receptive language, retrieval skills, and cognitive organization processes. Recall, ability to conceptualize, attention to task, and classification skills are also observed in this 60-second timed task.

**Interests:** Responses provide information about a child's level of expressive and receptive language, retrieval skills, and cognitive organization processes. Recall, ability to conceptualize, and attention to task are also observed.

**Prepositions:** This task assesses the child's understanding of specific prepositional phrases and his/her ability to apply them to a corresponding action.

**Color Forms:** This task measures visual discrimination by asking a child to place cut-out shapes on a corresponding card.

**Digit Repetition:** This task measures auditory and short term memory.

**Comprehension Questions:** A child's performance in this area measures cognitive processes related to problem-solving, personal experience, and knowledge and understanding of specific words and phrases.

**Three-Hole Form Board:** This item uses puzzle-like materials to measure a child's visual discrimination, depth perception, and spatial perceptual accuracy in a variety of orientations.

**Action Agents:** This task requires the child to produce a word (noun) that could produce the action suggested. Language comprehension skills are measured on this item. It requires a relatively long period of sustained attention and the ability to focus, sustain, and stay on-task.

**Identifying Letters and Numbers:** This task requires children to identify random capital letters and numerals 1-12 by name. This task is dependent upon prior knowledge.

**Numeracy:** This task consists of four measures: Counting, One-to-One Correspondence, Conservation, and Calculations. After demonstrating whether or not the child can count, the child is asked to both count 4 sets, using one-to-one correspondence (with increasing quantities), and then to tell how many there are in the set altogether (conservation). Calculations are simple items that can either be done by rote memory, or by using manipulatives to help figure out the answer.

**Fine Motor:** This fine motor task determines hand-eye coordination skills as the child drops one pellet at a time into a small jar, using first the dominant hand and then again using the non-dominant hand.

**Gross Motor:** These activities offer additional information concerning large motor skills, hand-eye coordination, and visual perception as the child walks on tiptoe, jumps, hops, balances on one foot, skips, throws, and catches.

**Overt Behavior:** Observed behavioral characteristics related to attention span, approach to task, posture, and verbal responses provide information on child's developmental level.

**Social Behavior, Emotional Development and Adaptive Skills:** These measures of social and emotional growth assess a child's interactions with peers and adults, ability to self regulate, and self-help skills.

### **Is the Gesell Developmental Observation-Revised reliable and valid?**

The GDO was the focus of a nationwide study in 2008-2010 to collect technical data for children 3-6 years of age on all 20 GDO tasks plus Overt Behavior, and Social/Emotional/Adaptive measures. This included collecting data using revised language on some tasks, and data on newly developed teacher and parent questionnaires which reflects current assessment practice on parent involvement and social and emotional areas of development. All items for each of the GDO tasks were administered to all children, whenever practical, using a standardized administration. In this way, scientific trends for mastery of items were documented as all children were given an opportunity to try each item in a task, even if the task was developmentally above or below developmental expectations based on their chronological age.

The complete GDO-R *Technical Report* lists the number of items, sample size (N), maximum possible points, mean raw score (Mean), standard deviation (SD), and internal consistency coefficient for each task. Ability level is reported for each age group and each task. Item

difficulties, also known as p-values, which represent the proportion of correct responses to dichotomously scored items or the proportion of the maximum possible score for teacher scored partial-credit items, by age group, are also listed for each item. A summary of Performance Expectations by Task and Age is included in the Examiner's Manual Appendix.

Since reliability is greatly influenced by the number of items in a test, it was expected that the more involved tasks having more score points or items (e.g., Cubes, Copy Forms, Action Items) would be more reliable than the shorter activities (e.g., Prepositions, Comprehension Questions). The reliability results presented in the *Technical Report* are consistent with these expectations and are acceptable for a developmental assessment. Inter-rater reliability was established by calculating internal consistency coefficients with members of the highly trained, expert National Lecture Staff. Content validity was derived by asking a team of experts in the early childhood field the following questions and also served as an anti-bias review:

- Does the content of the GDO 2007 reflect the information teachers need/want to know?
- Is the content of the GDO 2007 age-appropriate?
- Is the method for soliciting the information appropriate for children?
- Is the method for soliciting the information appropriate for teachers?
- Is the method for soliciting the information appropriate for parents/guardians?
- Is there any bias for sex, race, age, disability, socio-economic status or regional representation?

In addition, an online survey of current users of the GDO ©2007 were asked similar questions. As a result of these activities, some language on the GDO-R was changed to remove bias. Construct validity is supported by the fact that the GDO-R is being based on established theories of child development. Inter-item correlations of the GDO-R support construct validity. In summary, the GDO-R is a both reliable and valid measure of a child's development.

### **What constitutes *inappropriate* use of the Gesell Developmental Observation-Revised?**

- Gesell Institute is specifically opposed to the practice of excluding children from school programs on the basis of any assessment or screening tool. All children deserve the right to and opportunity for appropriate educational experiences during the early years.
- The Gesell Developmental Observation-Revised, or any *single* instrument, should never be used as the sole determinant of a child's placement in school. In making educational decisions for a child, multiple assessments, including parent observations, teacher observations, medical history, and a portfolio of a child's work should be included.
- Gesell materials should never be used for academic tracking, labeling or high-stakes assessment. The GDO-R does not discriminate on the basis of language, race, ethnicity, or economic status.

- In order to obtain results which are reliable and valid, the GDO-R must be administered in its entirety for the age band for which the tasks were designed. This includes the use of the two complementary measures, the TQ and the PQ. Any partial or incomplete use of the GDO-R is unreliable, cannot provide comprehensive results and is not endorsed by Gesell Institute.
- Gesell materials are not intended to be used to identify possible special needs children. The GDO-R can identify if a child may be at risk for developmental delay, but cannot identify nor diagnose any disease or condition of disability. However, Performance Level Ratings of *Concern* on any of the strands of the GDO-R may stand out as being a signal of an area to monitor for periodic re-screening or for referral for specialized evaluation.
- Only examiners who have attended a Gesell Institute GDO-R 3-day training workshop within the last 5 years are qualified to utilize the detailed observational data to appropriately score the Gesell Developmental Observation-Revised.

*For more information about Gesell Institute programs and materials,  
please visit our website at [www.gesellinstitute.org](http://www.gesellinstitute.org).*