Overview of Raven’s 2
Anne-Marie Kimbell, Ph.D., & Gloria Maccow, Ph.D.

Using Raven’s 2 to Assess General Ability Nonverbally

Topics

• Components of Raven’s 2
• Administration
• Interpretation
• Technical Properties

Overview

Ages: 4:0–90:11 years
Qualification Level: B
Format: Digital (Q-global); Paper-and-pencil
Publication Date: 2018

Individual and Group Administration
What is Raven’s 2?

- Nonverbal assessment of general cognitive ability that minimizes the impact of language skills and cultural differences.
- Measures eductive ability.

Theoretical Basis

**Spearman’s Eductive Ability**

Ability to perceive more than the overall gestalt and produce (possibly nonverbalized) hypotheses about what is important to notice within the whole.

**Contemporary Theory of Intelligence**

Solving progressive matrices involves cognitive functions such as perception and attention to visual detail, inductive reasoning, fluid intelligence, broad visual intelligence, classification and spatial ability, simultaneous processing, and working memory.

Applications of Raven’s 2

- Estimate general cognitive ability
- Gifted
- Intellectual Disability
- Group Screenings
  - Schools
  - Corrections
  - Military
  - Employment Placement Center
History of Raven’s Progressive Matrices

Standard Progressive Matrices (SPM: 1938)

Coloured Progressive Matrices (CPM: 1947)

Advanced Progressive Matrices (APM: 1962)

Revision Goals

Security > Google RAVEN’S >
Click Images > All items on line

Create New Items

Item Types

- 1 x 1
- 2 x 2
- 3 x 3
- 1 x 6
  - Position of missing piece
  - Items designed with one or more colors

Item from Public Domain

Item from Public Domain

Item from Public Domain
Revision Goals

- Develop Item Bank and Increase Test Security
- Update Norms
- Update Reliability and Validity
- Increase User Friendliness
- Extend Age Range

Components of Raven’s 2

- Digital Long Form
- Digital Short Form
- Paper Form
- Answer Sheet
- Scoring Template

Paper Form

<table>
<thead>
<tr>
<th>Ages</th>
<th>4:0–8:11</th>
<th>9:0–79:11</th>
<th>80:0–90:11</th>
</tr>
</thead>
<tbody>
<tr>
<td># Items</td>
<td>36</td>
<td>48</td>
<td>36</td>
</tr>
<tr>
<td>Time Limits</td>
<td>30 min</td>
<td>45 min</td>
<td>45 min</td>
</tr>
<tr>
<td>Discontinue Rule</td>
<td>--------------</td>
<td>None</td>
<td></td>
</tr>
</tbody>
</table>
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Paper Form Answer Sheet

Digital Long Form | Digital Short Form
--- | ---
Ages 4:0–8:11 | Ages 4:0–90:11
36 items | 24 items
30 min | 20 min
---
Beginning with item 11, six incorrect responses.

Which Form to Use?

- **Digital Long Form**
  - Form assembled randomly from large item bank.
  - Automated visual teaching, test administration, scoring and reporting.

- **Digital Short Form**
  - Shares most of the advantages of the Digital Long Form.
  - Exchanges a slight reduction in measurement precision for shorter testing time.

- **Paper Form**
  - No computers.
  - No internet connection.
  - Examinees not comfortable taking a digital test.

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Paper Administration: Required Materials

Examiner
- Raven’s 2 Manual
- Test Booklet and Answer Sheet to provide directions
- Stopwatch or other timing device
- Scoring Template (for hand scoring)

Each Examinee
- Test Booklet
- (Answer Sheet)
- Pencils with Erasers

Note: Examinee can respond in test booklet or on answer sheet.

Digital Administration: Required Materials

Examiner
- Raven’s 2 Manual
- Stopwatch or other timing device

Each Examinee
- Computer with internet access and a mouse
  OR
- A tablet device (e.g., iPad, Surface) that does not reduce the size of the stimuli to a very small or miniature appearance

Examiner’s Practice Link
- The link guides examiners through the process of presenting the demonstration items, sample items, and a few simulated test items.
- The examiner may practice at this link until comfortable with the digital test administration directions, workflow, automated sample item feedback, and expanded directions.
General Administration Guidelines

Demonstration Items
- Digital Format
- Introduce navigation within test workflow.

Sample Items
- Digital and Paper Format
- Teach and allow practice with item types.

Expanded Directions
- Digital and Paper Format
- Use if examinee does not understand sample item task requirements.

General Administration Guidelines: Icons

The Raven's 2 uses the following icons designed to cue examiners and examinees of necessary required actions:

- Wait & Listen Icon
- Assist Icon

Wait & Listen Icon

For both digital and paper administrations, the Wait & Listen icon (red, yellow, or green in color) indicates to examinees to stop and listen for directions while examiners read the demonstration, sample, expanded, or test item directions.
Demonstration Item Directions

• Three animated demonstration items play sequentially and automatically. These are not interactive; the examinees must only watch their screens.

• The yellow Wait & Listen icon appears when the last demonstration item animation has concluded.

Sample Item and Expanded Directions

Correct response: Proceed to the next item.
Incorrect response: Provide the expanded directions.
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Digital: Individual Administration

Digital: Group Administration

Digital: Group Administration
Examiners may record the responses for examinees with special needs who are unable to record their own responses using either the digital or paper format.
Hand Scoring: Answer Sheet

Age 8 years 11 months 26 days

<p>| | | | | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>27</td>
<td>497</td>
<td>106</td>
<td>94-118</td>
<td>66</td>
<td>58</td>
<td>6</td>
<td>Avg</td>
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<tr>
<td>TRS</td>
<td>AS</td>
<td>SS</td>
<td>CI</td>
<td>PM</td>
<td>NCE</td>
<td>STA</td>
<td>DC</td>
<td>AE</td>
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</tbody>
</table>

Use Tables in Appendix A to convert TRS to other scores.

Scoring Using Q-Global

**Digital Form**
- Scored automatically when report is generated.

**Paper Form**
- Select Q-Global manual entry option.
- Enter required examinee information and item responses.
Interpretation

Student A, age 4 years 1 month, was referred for evaluation of intellectual giftedness. She was administered the Raven’s 2 Digital Long Form in a group of five students over a 45-minute period. Due to a 15-minute break, her true administration time was 30 minutes. She received an ability score of 472 points. Her age-based standard score is 130 with a 95% confidence interval of 119–141. Student A performed at or better than 98% of her same-age peers. Her general cognitive ability falls into the Extremely High range, classifying her as intellectually gifted. Her age equivalent is 7 years 10 months.

Norm Sample

- A national sample, representative of the U.S. general population ages 4:0 to 90:11, was collected from December 2016 through August 2017.
- Data from the U.S. Census Bureau (2015) provided the basis for stratification along the following variables: age, education, race/ethnicity, geographic region, and gender.

<table>
<thead>
<tr>
<th>Special Education Classification</th>
<th>Percentage in Normative Sample</th>
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</thead>
<tbody>
<tr>
<td>Attention-Deficit/Hyperactivity Disorder</td>
<td>1.2</td>
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<tr>
<td>Autism Spectrum Disorder</td>
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<tr>
<td>Gifted and Talented</td>
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<tr>
<td>Intellectual Disability</td>
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<td>Specific Learning Disability</td>
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<tr>
<td>Speech/Language Impairment</td>
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Reliability of Normative Sample

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<tr>
<th>Form</th>
<th>Average r_{xx} (Age 4-16)</th>
<th>Average r_{xx} (Age 17-90)</th>
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<tbody>
<tr>
<td>Digital Long Form</td>
<td>.88</td>
<td>.89</td>
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<td>Digital Short Form</td>
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<tr>
<td>Paper Form</td>
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<td>.89</td>
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Special Group Studies

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<tr>
<th>Special Group</th>
<th>Matched Control Mean</th>
<th>Diff.</th>
<th>p value</th>
<th>Standard Diff.</th>
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Reliability of Special Group Samples

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<tr>
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Validity: Correlations With Other Measures

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<tr>
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<th>Digital Long Form</th>
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<td>WRAT-5 Math Computation</td>
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<td>WRAT-5 Sentence Comprehension</td>
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Advantages of Raven’s 2

- Group Administration
- Item Security
- Ease of Use
- Efficient
- Paper and Digital
- Large Item Bank
- Nonverbal
- Wide Age Range

Limitations

- Samples limited domains of cognitive functioning.
- Does not provide a good estimate of general cognitive ability for individuals with specific strengths or weakness in the cognitive domains not addressed with Raven’s 2.
- Should not be used alone to make diagnoses or educational placement decisions.
- Not meant to replace comprehensive measures of cognitive ability such as WISC-V or WAIS-IV.
For More Information . . .

www.pearsonclinical.com/ravens2
www.pearsonclinical.ca

Questions
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