

RAVEN'S[™] Advanced Progressive Matrices APM-III

FAQs



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RAVEN'S™ Advanced Progressive Matrices (APM-III) Frequently Asked Questions

APM-III is the new item-banked version of RAVEN'S™. APM-III delivers a set of 23 questions randomly selected from a pool (item bank) of matrices. This random assignment protects the integrity of the items and ensures that questions are not over-exposed. This document provides answers to the most frequently asked questions concerning the features and administration of APM-III.

What does RAVEN'S™ measure?

RAVEN'S™ is a non-verbal assessment tool designed to measure an individual's ability to think laterally, solve unfamiliar problems, make meaning out of confusion, and the speed with which they learn or “grasp” new things.

For which type or level of candidates can I use RAVEN'S™ APM?

APM can be used to evaluate a candidate's potential for success in higher-level positions, such as graduate, emerging leader, supervisory, executive, director, general manager, or equivalent high-level technical or professional positions in an organisation. For entry-level and non-managerial positions, we recommend RAVEN'S™ Standard Progressive Matrices (SPM).

What are the most important features in the APM-III version?

The APM-III contains 23 items that are generated from a bank of items.

APM-III can be administered as an online screening tool in unsupervised environments. The development of a bank of items ensures that no two applicants will receive the exact same set of questions.

Sharing screenshots of items with others is of little benefit, protecting the integrity and difficulty level of the test.

How does the APM-III differ from APM-II (the fixed-form version sometime referred to as APM-2)?

Answer: The two tests are parallel in that they are the same in terms of **length** and **level of difficulty**. Both tests are 23 items long with 4 practice questions and both are timed (up to 40 minutes). For both tests, each question has a multiple-choice response format from 8 possible answers. The correlation of APM-II vs. APM-III is 0.97, which is extremely high.

With APM-II every test-taker receives the same 23 questions. We call this a fixed-form test. APM-II was only designed for supervised completion.

With APM-II each question is scored only for right or wrong.

With APM-III each test-taker receives a test of equivalent difficulty selected from a large bank of items. The chances of each test-taker receiving the same set of 23 questions is miniscule, thus protecting the integrity of the test.

Each item is scored against three parameters:

1. if the answer is right or wrong
2. the level of difficulty of the item
3. the differentiation of the item

APM-III can be taken **unsupervised** or **supervised**.

How do you ensure that the randomly generated APM-III tests presented to candidates are equivalent in terms of test difficulty and item content?

Items were specifically designed to be parallel equivalents of the original APM-II items. Only the statistically most equivalent new items were chosen for inclusion in the final bank. Each item is coded in terms of item difficulty and item discrimination (whether the item discriminates between high/low ability levels) and this allows us to control the statistical properties of the random tests produced. The overall tests may differ slightly in difficulty and discrimination despite this, but this is taken into account by the online scoring system. See below for further explanation.

What process did Pearson use to create the APM-III norms?

Percentiles for the new version of the APM are based on **theta scores** rather than the traditional 'number correct' approach. The new APM items were trialed alongside the original APM (fixed-form) items, allowing the Pearson Psychometrics team to treat both item sets as one large item bank. Data for the original four APM norms was then rescored to produce 'theta scores' for each group, enabling the development of theta to percentile norm tables for the original norm groups.

Can clients use their own APM-II norms for the new APM-III?

Norms for the original fixed-form APM assessment are based on traditional 'number correct' raw scores rather than theta scores. It is, therefore, not possible to directly use fixed-form norms with the new version. If item level data is available, it may be possible, however, to recalculate client norms for usage with the item-bank version.

Should I carry out a new validation study before using APM-III?

If you have never used RAVEN'S™ APM before, we recommend that you always carry out a validation study on existing staff. If you are currently or have previously used APM-II then we would recommend carrying out a new validation study even though the correlation between forms is 0.97.

Questions on Scores and General Scale Interpretation

Theta Scoring and Item-banks

An advanced scoring methodology is used to calculate a test-taker's theta score, which is an estimate of someone's ability based on their responses to the items they completed. Each item has a difficulty and discrimination characteristic, based on research data, which is taken into account when scoring.

For example, test-takers will receive higher scores if they successfully answer the more difficult and discriminating items in the test than those that respond correctly to only the easier and less discriminating items. This results in a more sophisticated scoring system to traditional 'number correct' raw scores and also allows for candidates to complete different test items and still be scored on the same scale, which is not possible with traditional scoring.

Theta scores for the RAVEN'S™ APM test range from -4.000 to +4.000. Scores at the lower end of the scale (-4.000) signify very lower levels of ability, whilst scores at the top end of the scale (+4.000) indicate someone with very high levels of ability.

Theta scores run on a finely incremented decimal point scale, but are not easy to interpret. Therefore, scores are converted to percentiles for interpretation purposes.

Why aren't theta scores presented in the profile reports?

The theta scores are converted to percentiles for easier interpretation and comparison purposes and these are included in the profile reports.

Percentile Scores and Norms

A test score is compared against a Norm Reference Group. For example, if you are using the test to recruit a manager it makes sense to compare the individual's theta score against the scores of other managers who have taken the tests. These are contained in a norm group. There are a number of different norm groups to compare scores against.

Using the example above, if the candidate achieved a theta score of -1.500 (on the scale ranging from -4.000 to +4.000), if 80% of the people making up the norm group achieved scores of higher than -1.500, the person with the score of -1.500 is only at the 20th percentile, which is a low percentile score. The maximum score achievable is 99th percentile.

How should I transition from using the original APM-II norms to the APM-III norms?

If you are already making hiring or promotion decisions using a norm group in the original APM-II product, continue using the original APM until there is an appropriate time to make the transition to the APM-III. An appropriate time would be after you have made a hiring decision for a specific position and will be testing a new group of applicants for another position.

What if I have already determined cut scores based on the original APM scales?

As stated previously, you may continue to use the APM-II until a more appropriate time to transition to the APM-III. Keep in mind that you will need to collect sufficient data with the APM-III to establish new cut scores; when using the APM-III, you should not use cut scores from the older APM. Percentile scores can, however, be used for comparison.

What research and validation has been carried out on RAVEN'S™ item-bank?

Descriptive statistics and reliability values for the new test are presented in the Technical Manual. Additionally, research suggests a very strong degree of equivalence between the APM-II and the new item-bank test. It would be justifiable to generalise research from the previous to current APM version.

What languages are available for APM-III?

At launch, the APM-III test instructions AND reports will be available in the following languages

- English: UK
- English: Australia
- English: US
- English: India
- English: Singapore
- German
- Dutch
- French: France
- French: Canadian
- Norwegian
- Danish
- Swedish
- Portuguese: Brazil
- Italian
- Japanese
- Simplified Chinese
- Spanish: US
- Spanish: Castilian

Is APM-III available in paper format?

No. The item-banked version is only suitable for online use but it can be used for both unsupervised and supervised completion. The APM-II is only to be used under supervised conditions and it will continue to be available in paper format in some countries. Check with your local Talent Lens office.

Will licenses be offered for APM-III?

We are not planning to offer licenses for APM-III. Any existing licenses for online APM-II will continue but these tests should only be completed under supervision.

Unlike a fixed form test, the items in the bank have theta scores and the bank is scored using IRT technology. Many clients do not have experience of this technology. Also the bank of items will be updated by us regularly and some items retired; clients would need to reload the new items on a regular basis.

What can be done if there is concern that an applicant has cheated on the unsupervised APM-III?

Job applicants should be re-tested when they come in for the interview or a later stage of assessment. This is the verification stage. We recommend informing test-takers that they may be retested later on, under supervision, to discourage cheating. Applicants can be verified using another online test or paper version of APM. The additional tests will carry a cost but as verification takes place at the final stage of assessment, the numbers being tested are usually very low.

Should customers test all applicants with APM-III again under supervision?

This decision is up to the customer, but Pearson advises retesting (validation) as best-practice. Typically, only the final applicants are re-tested.

Can I transfer assessment inventory from the APM-II to APM-III?

Please contact Customer Service for more information.

Can a candidate's APM-II result be re-scored using a different norm group?

No. Because APM-III is theta scored, it is not possible.

Is the APM-II still available online?

It will only be available for a period of time to existing customers for supervised testing. It will not be offered to any new clients.

How long does APM-III take to complete?

The test contains 23 items and takes up to 40 minutes to complete.

Can the APM-III be completed on a mobile phone?

We recommend that the APM-III be completed on a computer, laptop or a tablet with a dependable internet connection and an easy-to-view screen. Cell/mobile phones with small screens are not recommended.

Can APM-III be linked from the Pearson test platform for administration via an API/ATS?

This should be possible but please contact Customer Service for further information.

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