

# UK Biobank

## Web-based version of Matrix Pattern Completion Test

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Version 1.3

<http://www.ukbiobank.ac.uk/>  
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## 1 Introduction

- 1.1 The UK Biobank cognitive function tests have been selected to cover a range of cognitive domains and are believed to be sensitive to cognitive decline and dementia. All tests have been constructed specifically for use in UK Biobank and other epidemiological studies in order to conform to the constraints of conducting large population-based studies. Tests have been constructed using established testing paradigms that have been shown to produce valid scores and to be acceptable to participants.
- 1.2 This manual details the procedure for the web matrix pattern completion test.
- 1.3 Respondents were invited to complete the questions using their own devices, via touchscreen interface (tablet or phone) or traditional desktop computer.

## 2 Web matrix pattern completion test

- 2.1 Respondents are presented with a set of patterned blocks. From a selection of six to eight other blocks presented separately, they must identify the missing block that best completes the pattern.
- 2.2 At the start of the test, the following text is shown:  
*“We would like you to do some pattern matching puzzles.*  
  
*You will be shown some patterns which have a piece missing and a selection of pieces which might fit the missing corners.*  
  
*Your task is to select the piece which best completes the design at the top. There will be 3 practice patterns to try before the real puzzles start.”*
- 2.3 Before the test starts, respondents are asked to click the purple square with white vertical bar in the live demo (see Fig. 1). The following text is shown: *“Here is a practice puzzle. Select the piece that best completes the design.”*

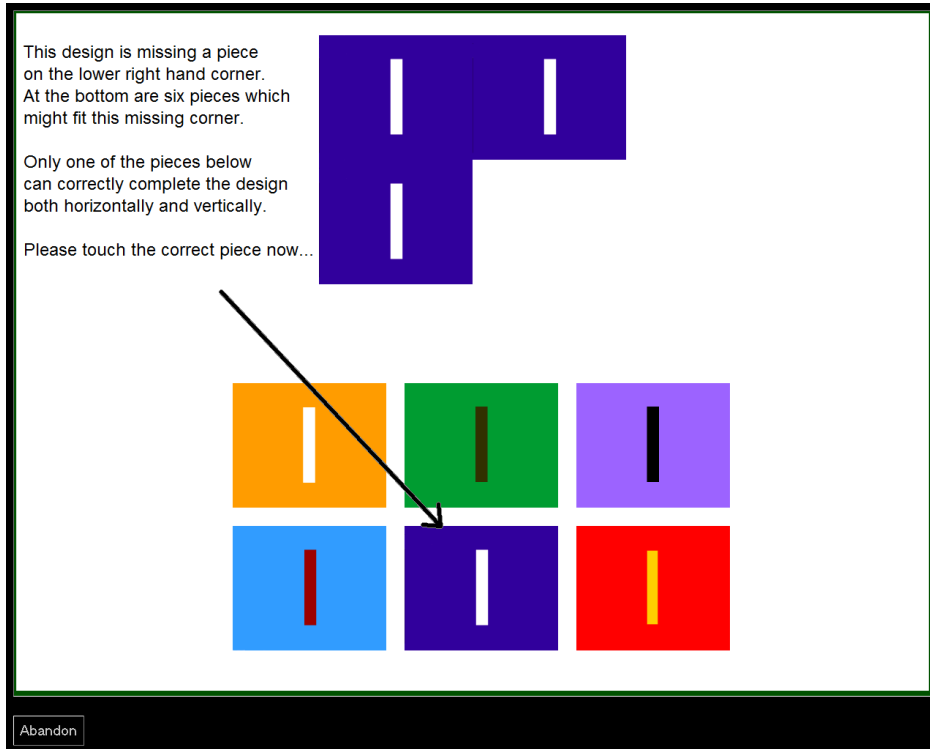


Fig. 1. Live demo.

2.4 Respondents go through two further practice puzzles.

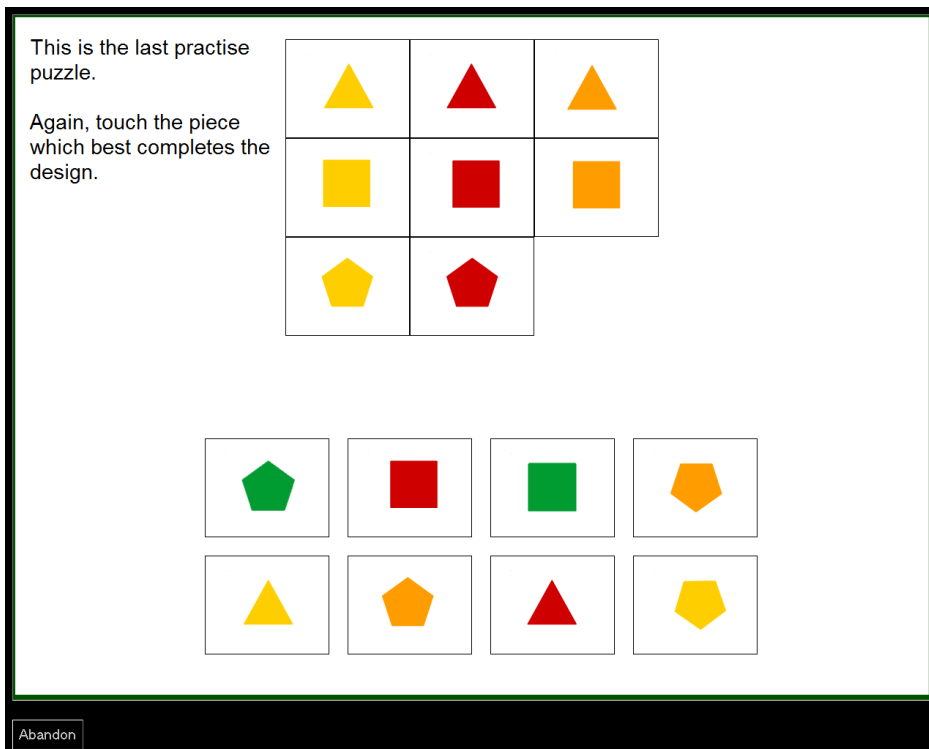


Fig. 2. The third practice question.

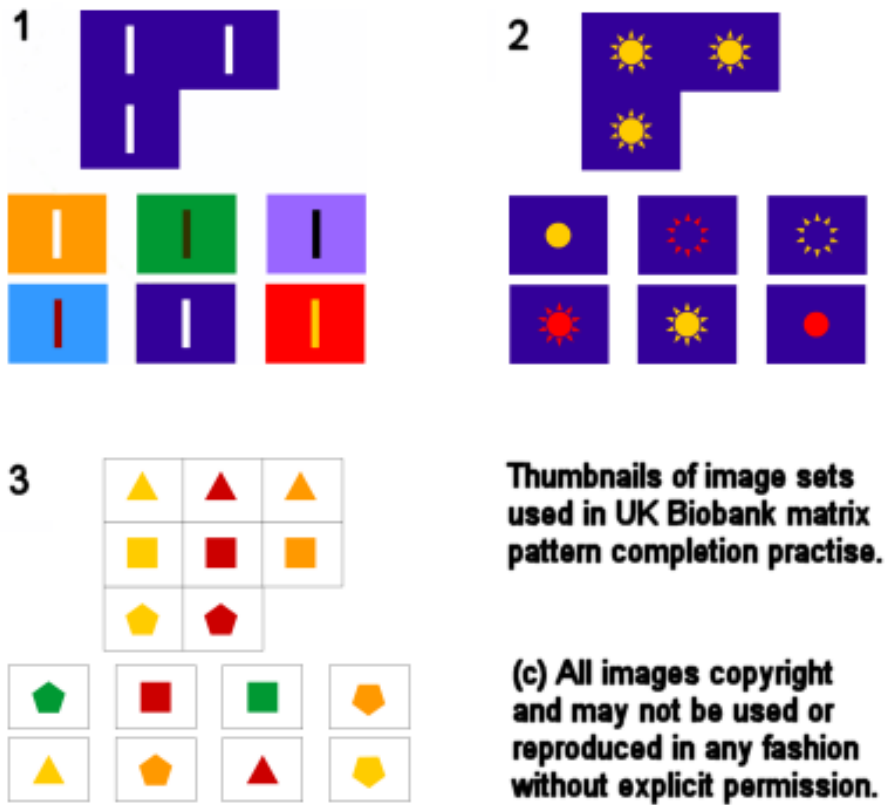


Fig. 3. Three practice questions.

2.5 At the start of the real test, the following text is shown:

*“You will have 3 minutes to do as many puzzles as you can. Select “Begin test” when you are ready to begin.”*

2.6 Fig. 4 shows copies of the 15 images (indexed 0-14) used in the matrix pattern recognition test. Patterns 0-14 are shown in order until 3 minutes has elapsed.

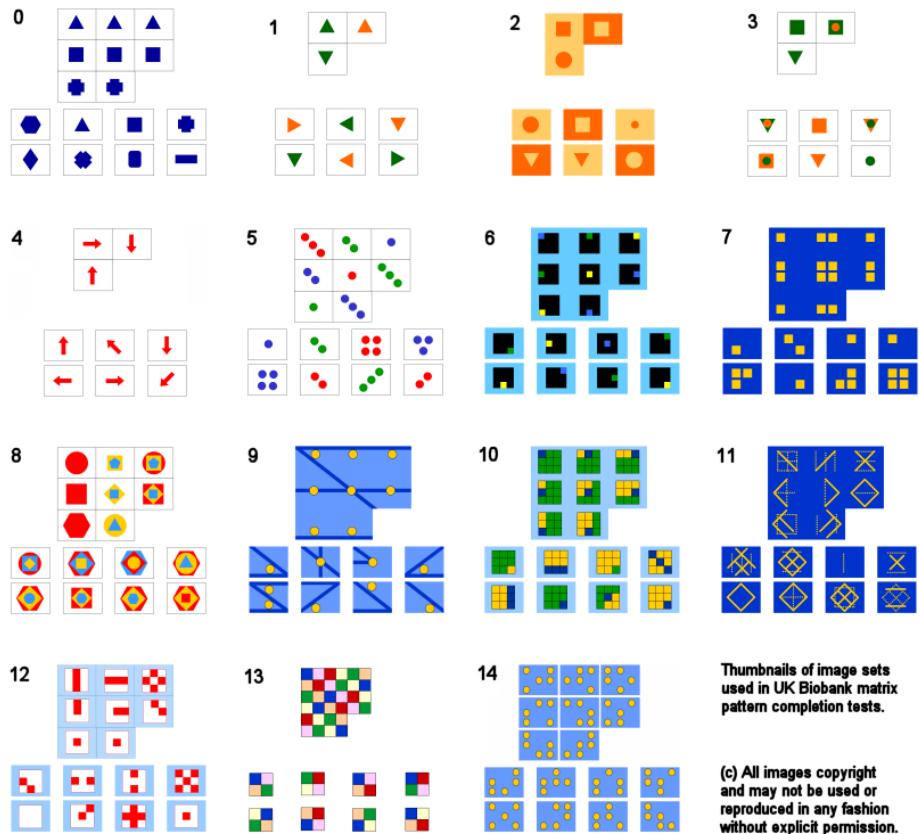


Fig. 4. The web matrix pattern completion test.

### 3 Data captured

The following data are stored for the web-based version of the test:

- Data field 20760: Number of puzzles correctly solved
- Data field 20761: Number of puzzles viewed
- Data field 20762: Item selected for each puzzle
- Data field 20763: Duration spent answering each puzzle
- Data field 20764: Matrices puzzle completion status
- Data field 20765: When matrices puzzle completed