

University College London

# Guidelines and Key Recommendations for the Implementation of the Harmonized Cognitive Assessment Protocol (HCAP) in the English Longitudinal Study of Ageing (ELSA)

ELSA-HCAP2 Study Implementation Report (2022-2024)

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A considerable amount of her work has been focused on bringing rigour and practical insights to the field by standardising fieldwork procedures, understanding how to minimise methodological weaknesses and improve data collection and analysis in epidemiological studies. Dr Hayat has delivered workshops and training sessions on fieldwork, standardisation and best practices across studies and is committed to bridging the gap between theory and practical application in epidemiological research. By fostering effective working relationships and collaborations, Dr Hayat has contributed to a more nuanced understanding of cognitive ageing and dementia, supporting efforts to improve the health and well-being of older populations worldwide.

Dr Hayat worked on the European Prospective Investigation of Cancer in Norfolk Study (EPIC-Norfolk), introducing cognitive measures in 2002, joining the Healthy Ageing Cognitive Project in the English Longitudinal Study of Ageing (ELSA-HCAP) in 2022 and was responsible for overseeing the implementation of the second wave of ELSA-HCAP.

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## Preface

During the fieldwork preparation phase, interviewers are provided with project instructions and training on data collection. These guidelines provide additional details and understanding of the Harmonized Cognitive Assessment Protocol in the English Longitudinal Study of Ageing (ELSA-HCAP). This is aimed for UCL researchers overseeing the fieldwork implemented by the National Centre for Social Research (NatCen), a social survey company that has vast experience of working on ELSA since the study began in 2002.

For transparency and clarity, included here are the modifications that were introduced during ELSA-HCAP2 (2022-2024) as well as limitations and recommendations for further development or review. This document leverages insights gained from the implementation of ELSA-HCAP2 including queries and feedback from interviewers involved in data collection and from the “Briefings” (training sessions). Further knowledge and understanding emerged from discussions with colleagues from the other three English-speaking HCAP sister studies, the Health and Retirement Study (HRS), The Irish Longitudinal Study on Ageing (TILDA), and the Northern Ireland Cohort for the Longitudinal Study of Ageing (NICOLA) has also been included. An earlier iteration of these guidelines was used to develop the Project Instructions, a support document for HCAP Interviewers.

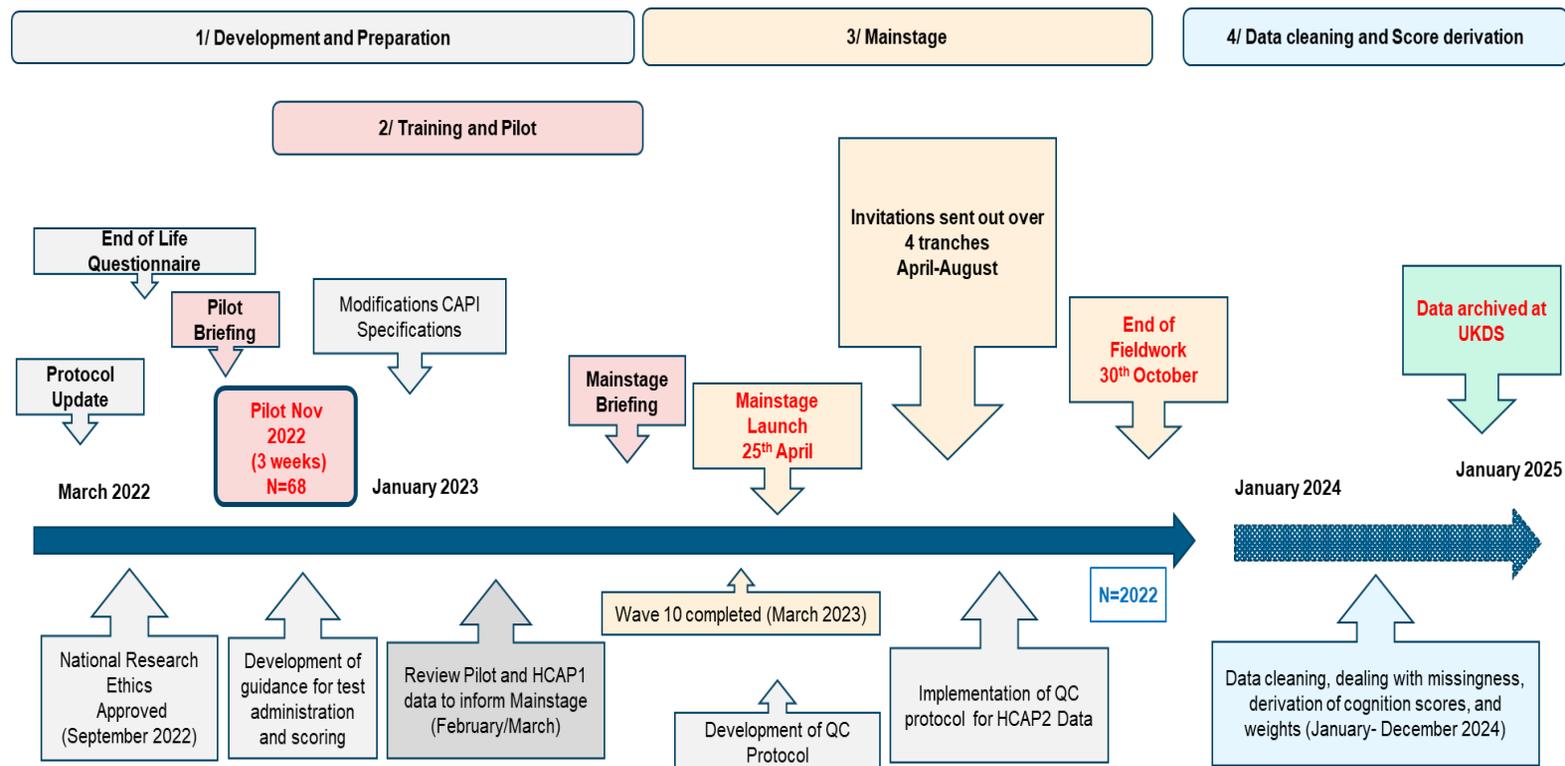
The purpose of these guidelines is to facilitate protocol compliance, reduce errors, and maintain internal and external validity of the HCAP across the HCAP network of sister studies.



## Timeline for ELSA-HCAP Study Implementation

Figure 1 shows the 4 main phases of the implementation of the second wave of HCAP in ELSA. The first phase of development and preparation included updating documentation and securing ethical approval for the study from the National Research Ethics Review Board. The second phase included the interviewers' training followed by the piloting of data collection. This phase also included modifications to the Computer-Assisted Personal Interviewing (CAPI) The third phase involve the data collection which was completed over 6 months. The final phase of data cleaning and score derivation had to be extended and took over 12 months before the data were archived in the UK Data Service (UKDS) repository.

(<https://ukdataservice.ac.uk/>)



Abbreviations: CAPI, Computer-Assisted Personal Interviewing ELSA-HCAP, Harmonized Cognitive Assessment Protocol in the English Longitudinal Study of Ageing; N, Number; QC, Quality Control

Figure 1: Diagrammatic representation of timeline of second wave of HCAP in ELSA (ELSA-HCAP2)



## Organisational Structure and Data Flow

The fieldwork is conducted and managed by National Centre for Social Research (NatCen), with the ELSA-HCAP researchers based at University College London (UCL) providing guidance and oversight. Regular collaboration with the wider international HCAP network (<https://hrs.isr.umich.edu/data-products/hcap>) ensures methodological alignment, consistency and harmonisation across studies. Although NatCen researchers work on different studies and projects, a dedicated team are assigned to ELSA-HCAP for the period of the project. The data team based at NatCen are responsible for all the programming from developing the Computer-Assisted Personal Interviewing (CAPI) program, through to coding and derivation of variables (using code from the lead study at HRS) and creating the final datasets for archiving. Figure 2 is a diagrammatic representation of the data and information flow between the two organisations.

**Modifications introduced during ELSA-HCAP2:** Improved integrated working was developed between the NatCen and ELSA-HCAP researchers with regular weekly meetings and direct involvement of ELSA-HCAP researchers at briefing sessions and accreditation process. A new data sharing agreement allowed the secure and efficient transfer of specific data with identifiers. Immediate access to these data facilitated quality control of HCAP data.

**Recommendations for further development or review:** There is still scope for further involvement of ELSA-HCAP researchers with the field and data team at NatCen. ELSA-HCAP researchers should be involved with discussions with the Data team as early as possible prior to start of fieldwork and have contact with interviewers to deal with any queries related to implementation throughout the fieldwork phase. This will make data capture, processing and cleaning more accurate and efficient and allow for faster corrective actions.

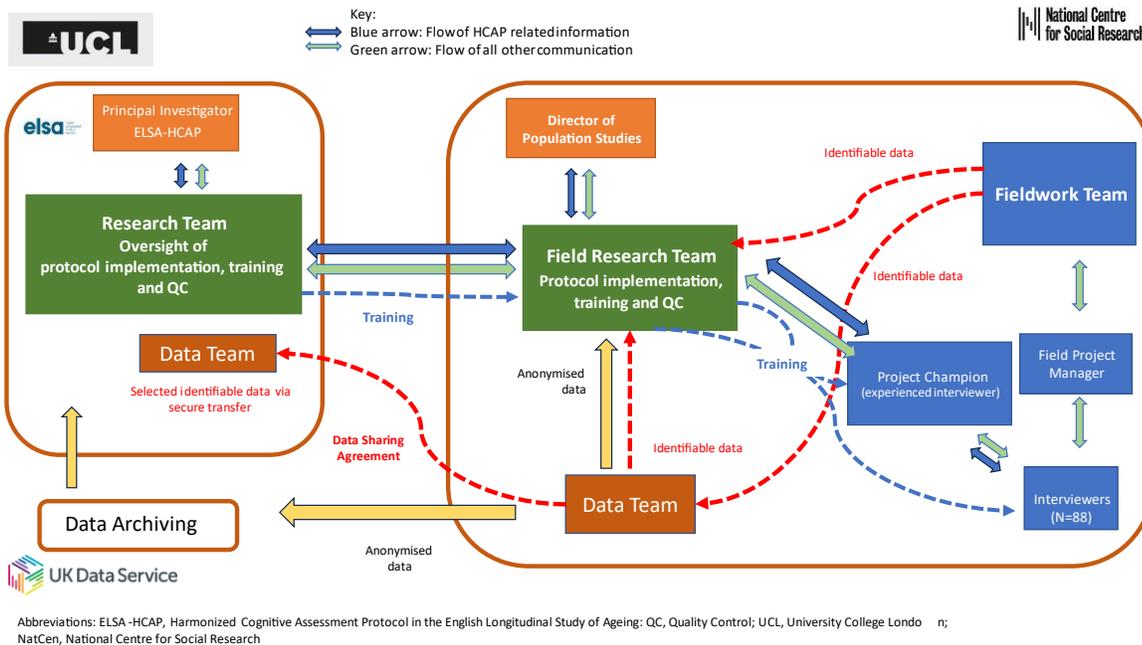


Figure 2: Diagrammatic representation of data and information flow between the ELSA-HCAP researchers at the two organisations, UCL and NatCen responsible for implementing fieldwork.

The ELSA-HCAP interview is face-to-face, administered by trained interviewers using the CAPI program. The interview consists of nineteen different measures of memory, language, attention, and other aspects of cognitive ability and depression that were administered in the first wave of ELSA-HCAP in 2018. These are mostly completed verbally by the respondent with the interviewer recording answers on the laptop, but some elements are completed by the respondent using paper and pencil.

**Modifications introduced during ELSA-HCAP2:** During ELSA-HCAP2, audio-recordings were introduced to capture information that may be missed during the interview and used by the research team for quality control. The aim was to improve the quality and validity of the data collected without adding further burden for the respondent or the interviewer and reducing the time taken to conduct the interview.

A timer was integrated into the CAPI for all timed tests in HCAP. Once the Interviewer started the CAPI timer, it would run for the allocated time for that test, notifying the Interviewer with the command 'STOP' appearing on the screen so that they can inform the interviewer to end the task.

A Workbook (in booklet form) was created to allow most of the pencil and paper tests to be captured in a single document to minimise loss of paperwork and facilitate management of paperwork for Interviewers.

**Recommendations for further development or review:** The quality of the audio recordings varied significantly, with some being insufficient or unusable. It is advised to use a separate microphone to audio-record the interview for the best quality. If the interview is being recorded on the laptop, interviewers should sit close enough to capture the voice of the respondent. The quality of recording should be checked early on in the interview. Poor quality recordings should be noted.

There were some issues with timing, where the respondent was not stopped at the end of a timed task. It may be helpful to include a beeper or sound as a second reminder for the interviewer as well as the 'STOP' sign that appears on the screen.

For further waves, the paper used for the Workbook should be sufficiently opaque and thick to ensure that previous entries are not visible to the respondent, to ensure the integrity of the memory test.

As part of HCAP1 and HCAP2, interviewers were not required to deposit all the paperwork, but only for certain tests. This should be changed so that interviewers submit **all written information** capturing as much as possible in the Workbook (avoiding inclusion of any identifiable information other than Respondent ID). This will improve the quality control of all items of the HCAP battery.

## Interviewers

Interviewers for ELSA are conducted by freelance lay people. ELSA-HCAP2 involved 88 Interviewers for the data collection which was completed within 6 months.

**Modifications introduced during ELSA-HCAP2:** Cognition is an area which may cause the respondent anxiety. Interviewers were informed that they must be aware of this when administering the ELSA-HCAP battery and watch for any signs of distress. More reassurance and encouragement may be required at different points. Interviewers were advised to say 'some of these tests are meant to be difficult while others easy so whatever you are doing is absolutely fine' in response to reactions from the respondent at any point of the interview. Respondent's concerns should not be ignored.

**Recommendations for further development or review:** Larger interviewer numbers speed up data collection phase, although may potentially enhance interviewers' bias. Reducing numbers to 30-35 interviewers will streamline the training and the study implementation and reduce between-interviewer inconsistency or variability.

## Training and Accreditation

As part of the training, interviewers were provided with detailed instructions on administering each of the HCAP cognitive tests, following written scripts and how to accurately record and document the responses. They were also given details on the appropriate steps that should be taken when visiting participants who may be elderly, frail or otherwise vulnerable. Interviewers had to pass five areas of the complete interview. These are as below:

1. MMSE accreditation: Interviewers had to administer assessments and score respondent answers and shape drawing correctly.
2. Storytelling accreditation: Accreditors read a script of two stories, with a mix of right and wrong answers. Interviewers were marked on how accurately they scored these.
3. Trail making: Interviewers had to read out instructions correctly, guide accreditors doing the trails appropriately, correct them if they went off course, and use the CAPI to time the exercise accurately.
4. Shape drawing: Interviewers had a worksheet with shapes drawn with varying numbers of errors. Interviewers passed if they scored these correctly.
5. General accreditation: Interviewers had to stick to the script on CAPI, give instructions slowly and clearly, have relevant documents to hand and use them correctly, and avoid showing any answers to the interviewee.

If Interviewers failed on any section they were provided with feedback, time for extra practice, and re-accredited. If they were still unable to pass during the in-person training, Interviewers were followed up online. This happened twice for the 88 interviewers in ELSA. The Accreditation and Re-accreditation documentations are included in **Appendix 1**.

**Modifications introduced during ELSA-HCAP2:** The training and accreditation were both modified to provide more context and detail. This included introduction to the tests as presentations and included practice for each test item. The cognitive battery of ELSA-HCAP was covered in 2 day in-person training session with extra half day online session.

**Recommendations for further development or review:** Feedback from Interviewers and researchers highlighted key areas for improvements on training and accreditation. This includes more time and privacy for practice, particularly reading CAPI screens, handling materials and accurately scoring specific items in battery. Also to include quizzes to reinforce learning across the two days. Interviewers expressed interest for further discussion of potential concerns that might be raised by the topic of cognitive function. Further emphasis should be placed during the training that differentiates HCAP as an assessment that aims to evaluate specific abilities of the respondent, from a standard survey and how the data should be reported to accurately reflect the cognitive status of the respondent. This is particularly important when capturing 'don't know' responses and missing data

in HCAP. It is essential to ensure that all interviewers are fully competent in conducting the entire interview. Those who struggle with any part of the process should not be chosen for the HCAP interview.

## Preparation & Equipment for the Interview

Interviewers were advised to have all documentation and items for each cognitive test ready in the pack and labelled prior to the interview. Detailed descriptions of preparation were included in the Project Instructions provided to interviewers at the training. Some of the tests needed certain materials to complete the task. These were indicated under each test item below.

**Recommendations for further development or review:** Feedback from Interviewers highlighted the importance of accurately recording updates (e.g. to contact details) as this impacted the time and resources for tracing respondents. They also highlighted difficulty with managing the paperwork for the large number of tests in HCAP. Interviewers should be provided with equipment (such as file organisers) to help keep paperwork organised. Additional guidance on managing the paperwork should be included in the training.

## Administering the ELSA-HCAP Battery

It is important to adhere to the script in CAPI to ensure uniformity across interviewers. At the same time, interviewers should attempt to sound as comfortable and natural as possible with the questions to maintain rapport. Interviewers were told as part of their training and in the Project Instructions that they must ensure the respondent is relaxed and comfortable, able to concentrate, and the room is free from distractions. Also to remind the respondent to wear their corrective glasses or hearing aid if they need to

This is the text included in the CAPI that that was read out to the respondent prior to the first question:

*The next set of questions are concerned with memory and thinking. If you usually wear glasses or use a hearing aid, it is important you use them for the interview. I am going to ask you a range of questions, some might be easy, and some might be difficult. Please do not worry about making a mistake or giving a wrong answer.*

Interviewers were guided to speak slowly and clearly. If the respondent appeared not to have heard or understood, the question could be repeated (unless the item specifically prohibits repetition). Interviewers were to enter any item that was not attempted, refused, or respondent answered as 'don't know', using the correct codes.

Interviewers were also told the importance of capturing additional information that they thought may be important or have an impact on the respondent's performance, or why a respondent refused or said 'don't know'. This included (from the Interviewer's perception) of any cognitive impairment, health or practical reasons such as poor vision or running out of time. Interviewers were guided **NOT TO CORRECT** if a wrong answer was given. Furthermore, interviewers were not to give ANY feedback about the respondents' performance on the test, even after the interview is over.

**Modifications introduced during ELSA-HCAP2:** Comments boxes were included in CAPI to allow the interviewers to capture additional information.

**Recommendations for further development or review:** Feedback from some interviewers was noted during the quality control checks. Interviewers should be given guidance on how to politely refrain from giving feedback in future waves.

## Data Capture and Scoring of the ELSA-HCAP Battery

The order of administration of the 19 items of the ELSA-HCAP battery is listed in Table 1. The CERAD word list and constructional praxis items assess memory and are split over different time points during the interview. Exact instructions for administration are given on CAPI, with help screens if needed. These should be read *verbatim* directly from the screen.

**Table 1: Measures in the Respondent Interview**

1. Mini-Mental State Examination (MMSE)
2. HRS Telephone Interview for Cognitive Status (HRS-TICS)
3. CERAD Word List Learning and Recall - Immediate
4. Retrieval Fluency
5. Letter Cancellation
6. Backward Count
7. 10/66 – Respondent
8. CERAD Word List Recall – Delayed
9. Wechsler Memory Scale IV – Immediate
10. CERAD Word List Recognition
11. Constructional Praxis – Immediate
12. Symbol-Digit Modalities Test
13. Constructional Praxis – Delayed
14. Wechsler Memory Scale IV – Delayed
15. Wechsler Memory Scale IV – Recognition
16. Number Series
17. Raven’s Standard Progressive Matrices
18. Trail Making
19. CES-D Depressive Symptoms

**Modifications introduced during ELSA-HCAP2:** CAPI was modified to capture raw data as well as scores (as in HCAP1) by the Interviewer. This was an important change from HCAP1. In some cases, CAPI was programmed to make the calculations. This was to reduce the burden on the Interviewer. Details are given in the relevant sections below. During ELSA-HCAP2, both the completed (productive) and partially productive (completed MMSE component only) interviews were included in the final dataset.

## Mini-Mental State Examination (MMSE)

### Introduction

The goal of the Mini-Mental State Examination (MMSE) is to measure the respondent's overall cognitive status. The MMSE contains 20 items assessing orientation (to time and place), memory recall (immediate and delayed), attention and calculation (WORLD and serial 7's), object naming, verbal registration (repeat a phrase, follow a three-stage command), language (read and write a sentence), and visuospatial/constructional performance (pentagon copying).

### Equipment required

The materials necessary to complete these tasks are, a sharpened pencil, paper booklet, the "Close Your Eyes" laminated show card, the 5-sided drawing show card, and a wristwatch. It was decided by the ELSA-HCAP researchers that a Fitbit should NOT be used as an alternative for a watch - this is not a common household item and may be confusing for the respondent). It was agreed that digital and smart watches were acceptable if they clearly look like a watch (with least information other than the watch face). Otherwise, Interviewers should be provided with a (cheap) standard traditional watch as part of their equipment. An alternative object to a pencil or watch can be used, but this must be a common item (such as a pair of spectacles or a cup) and the Interviewer must make a note of the object used as instructed in the CAPI.

**Potential error in administration:** Interviewers should use a physical object and NOT point to their empty wrist and say 'what would I wear here?' – as this is deviating from the original question.

**Modifications introduced during ELSA-HCAP2:** For each item, the interviewer entered the answers as provided by the respondent in addition to scoring the answer as correct or incorrect.

### Additional guidance for administration and scoring the MMSE

#### Orientation to Time (year, month, day, and date)

Answer must be **exact** year, month, day, and date to be correct.

#### Seasons

**Modifications introduced during ELSA-HCAP2:** During the training period, it was decided to list the answer in CAPI as an aide for the Interviewer to minimise data entry errors.

Acceptable seasons for each month listed below

- ❖ Winter – November/December, January and February.
- ❖ Spring – February/March, April and May.
- ❖ Summer – May/June, July and August.
- ❖ Autumn – August/September, October and November.

Note: if a month is on the border of two seasons, for example February, both Winter and Spring were counted as correct answers. The interviewers were not to read aloud the options to the respondent as these were listed on the CAPI. If the respondent provided a different answer, the interviewer was guided to capture the response verbatim in the additional free text boxes.

#### Orientation to place

**Modifications introduced during ELSA-HCAP2:** The details of the respondent's address were made available on the CAPI screen to assist the Interviewer with this question.

Acceptable responses were as listed below:

**Country:** England, Britain, Great Britain, United Kingdom (all correct). If respondent had moved out of England and lived in Wales and the respondent correctly said “Wales”, this was captured on CAPI as ‘other’ and the Interviewer then typed “Wales” at the other specify question. This was coded as “correct answer” by the Interviewer.

**County:** CAPI showed the full address of the respondent which included County if previously provided. Answers given as ‘regions (e.g., Southeast, East of England etc) were to be scored as **Incorrect**, as these are considered to be too broad geographical area although in the case of **West Midlands**, this is **Correct** as a county. For respondents living in London naming the ‘Borough’ as the response for the name of the ‘**county**’ was to be coded as **Incorrect**. Counties in England and Wales as listed in Tables 2 and 3 were provided in the Project Instructions.

Due to the complexity of naming and geographical boundaries of counties in England, Interviewers could use their discretion for this item.

**City:** As on the respondent’s address entered in the CAPI. *For London only, the Borough* in response for the name of the ‘**city**’ was accepted as **Correct** (as in HCAP1).

**Street:** As on the respondent’s address entered in the CAPI.

For respondents living in an institution, there was an option in CAPI which the interviewer could transfer to. The question was: ‘What is this building?’ and the **name or type of institution** could be accepted as **Correct**

**House number or building name:** As on the respondent’s address entered in the CAPI

For those living in an institution, the question “What is this part of the building?”

The floor, area or ward name could be accepted as **Correct**.

**Table 2: Counties in England**

Bedfordshire	Lincolnshire
Berkshire	London (Greater London)
Bristol	Merseyside
Buckinghamshire	Norfolk
Cambridgeshire	Northamptonshire
Cheshire	Northumberland
Cornwall	North Yorkshire
Cumbria	Nottinghamshire
Derbyshire	Oxfordshire
Devon	Rutland
Dorset	Shropshire
Durham (County Durham)	Somerset
East Sussex	South Yorkshire
Essex	Staffordshire
Gloucestershire	Suffolk
Greater London	Surrey
Greater Manchester	Tyne and Wear
Hampshire	Warwickshire
Herefordshire	West Midlands
Hertfordshire	West Sussex
Isle of Wight	West Yorkshire
Kent	Wiltshire
Lancashire	Worcestershire
Leicestershire	East Riding of Yorkshire

**Table 3: Counties in Wales**

Anglesey	Merthyr Tydfil
Blaenau Gwent	Monmouthshire
Bridgend	Neath Port Talbot
Caerphilly	Newport
Cardiff	Pembrokeshire
Carmarthenshire	Powys
Ceredigion	Rhondda Cynon Taff
Conwy	Swansea
Denbighshire	Torfaen
Flintshire	Vale of Glamorgan
Gwynedd	Wrexham

### Registration (Apple, Penny, Table)

Instructions: *If any errors or omissions are made on the first attempt, the interviewer must repeat all the names until the respondent learns all three (doing this for a maximum of **five** times). However, this must only be scored as 'correct' if the respondent **named all three items correctly in the first trial**.*

**Modifications introduced during ELSA-HCAP2:** Interviewers were given clear instruction both in the CAPI and as part of the training on how to administer this item, particularly the point that they must only score the first attempt only, even though they were permitted to repeat the question up to 5 times if the respondent did not recall all 3 items.

### Serial Sevens

**Modifications introduced during ELSA-HCAP2:** The Interviewer entered the raw data (answers given by the respondent) into CAPI as well as the score for each calculation as **Correct** or **Incorrect**. CAPI was modified in HCAP2 to calculate the total score.

The score was **Correct** if the answer was **exactly 7** less than the previous answer regardless of whether that answer was correct using the following calculation:

Answer 1 = **93 Correct** if not 93 then **Incorrect**

Answer 2 = **86** or -7 from 1<sup>st</sup> answer (**Correct**) if not -7 from 1<sup>st</sup> answer, then Incorrect

Answer 3 = **79** or -7 from 2<sup>nd</sup> answer (**Correct**) if not -7 from 2<sup>nd</sup> answer, then Incorrect

Answer 4 = **72** or -7 from 3<sup>rd</sup> answer (**Correct**) if not -7 from 3<sup>rd</sup> answer, then Incorrect

Answer 5 = **65** or -7 from 4<sup>th</sup> answer (**Correct**) if not -7 from 4<sup>th</sup> answer, then Incorrect

### WORLD

In ELSA-HCAP, respondents are directed to this item only if they refuse or are unable to do the serial 7 item. The Interviewers were instructed to write the letters in the **exact** order as they are said by the respondent, and then select whether the backward order was **Correct** or **Incorrect** in a follow up question on CAPI.

The Respondent was able to correct errors if they did so immediately whilst they were spelling backwards. However, they could not rectify an error they made at the beginning once they had reached the end of the word (to the letter 'W').

**Modifications introduced during ELSA-HCAP2:** A note was added in the CAPI 'Did respondent correctly spell WORLD backwards: D-L-R-O-W' to assist the Interviewer with this question. As part of the training, interviewers were informed that if a respondent mishears and said something different, such as 'WORD' then the Interviewer could make it clear that the word was 'WORLD' without actually spelling it.

The score was only **Correct** if the respondent got **all 5 letters** in the correct backward order. Unlike the serial 7, this item is an 'all or nothing' score.

**Recommendations for further development or review:** Scoring in this way means that there is inequivalence between the WORLD and Serial 7 items of the MMSE. The WORLD item is completed by a small fraction of the cohort as compared to those completing the Serial 7. This item needs further review by HCAP collaborators for future HCAP waves. The other studies use a different approach. HRS only administers the 'WORLD' item in HCAP (with Serial 7 in the cognitive assessment of the core study) and TILDA and NICOLA administer both for all participants and include the 'best score' in the final MMSE score.

### Word Recall (Apple, Penny, Table)

Exact answers only were accepted as **Correct** (although same order not necessary).

### Expression/Naming (pencil/pen and watch)

Accurate naming was required for a correct response. **Descriptions of function** (e.g., ‘used for writing with’ or ‘used for telling the time’) were to be scored as **Incorrect**. In the case of approximate answers, Interviewers should say ‘Can you think of another word for it?’ if the exact response is not given, Interviewers should mark as **incorrect**. If a respondent refers to the watch as a ‘clock’, this is also **Incorrect**.

**Modifications introduced during ELSA-HCAP2:** For the sake of consistency and clarity, the HCAP researchers insisted on the use of the items as indicated in the test (i.e. a pencil/pen and a watch). However, if using another object, Interviewers were instructed that they must make a note of this on CAPI. To avoid any further variability, specific examples of acceptable items were included in the Project Instructions to assist the Interviewers (household items such as a plate, cup or spoon). Examples to include had to have a specific function that was familiar to the Respondent. Some items may have more than one correct name, so Interviewers were instructed to make a note of the response given.

### Repetition

The idiom used is “**No ifs, ands, or buts.**”

**Modifications introduced during ELSA-HCAP2:** This idiom is more typically used in the US. In the UK, the phrase is ‘no ifs or buts’ and so this item was considered to be more prone to mistakes in the English setting. Interviewers were told to speak clearly and slowly, enunciating all the S’s.

Instructions for this item were emphasised during the training and included in the Project Instructions. Specifically, interviewers were told to watch out for ‘**And**’ (score = **Incorrect**) instead of ‘**Ands**’ and watch out for ‘**If**’ (score = **Incorrect**) instead of ‘**ifs**’. The phrase could be repeated up to 5 times, but interviewers were to only score the first trial. Interviewers were also told that if the respondent clearly indicated that they did not hear properly the first time, they could repeat the phrase, and the respondent is scored on the second attempt. However, if the respondent again reported not hearing the phrase on the second administration, this item should be scored as **Incorrect**. Interviewers were told to use their judgment and note hearing difficulty as an impediment (in the comments box).

### Language

Language was tested using comprehension, reading, and writing tasks.

**Modifications introduced during ELSA-HCAP2:** For the language items below, additional instructions were provided in both the Project instructions and the training sessions. Typing the sentence (for the “Language - Writing” item) into CAPI was also introduced as a modification in ELSA-HCAP2. These were as follows:

#### Language: Comprehension

- ❖ Place the page in the centre and not to any hand in particular.
- ❖ If repeating instructions repeat all 3 stages together.
- ❖ Respondent can use 2 hands to fold the paper.
- ❖ Table can be used instead of floor if needed.
- ❖ If paper has more than one-fold, score the folding action as **Incorrect**.

### Language: Reading

- ❖ Give the instruction before showing the respondent the page.
- ❖ Respondent must close eyes.
- ❖ Only give instruction once.

### Language: Writing

- ❖ Must record answers in Workbook and type into CAPI
- ❖ Spelling, grammar, punctuation, and capitalisation are not important.
- ❖ To score a point, the sentence must make sense
- ❖ be complete and not fragmented
- ❖ include a subject (can be implied)
- ❖ include a verb, and the verb has to be clearly stated and not be implied
- ❖ If unsure- Interviewer to ask for another or if necessary, a longer sentence

### Examples of a sentence that is 'Incorrect'

A phrase is part of a sentence and usually does not contain a verb. If a respondent writes even a well know phrase, proverb, idiom or a line from a nursery rhyme, then that must be marked as 'Incorrect' if it does **not include a subject and a verb**.

An example of an **Incorrect** sentence is 'Three blind mice' ('There were three blind mice' =**Correct**)

Other examples of **Incorrect** sentences are 'More haste, less speed', 'Frying tonight', 'Time for tea' or 'Great Bargains'.

If the respondent writes 'A sentence', taking the directions literally, as a joke or due to some confusion, then the directions should be clarified, and the respondent should be asked to write another sentence.

### If uncertain

If uncertain whether a sentence is incorrect or correct, Interviewers are advised to think of saying the sentence back in isolation (and out of context) to someone. If the interviewer thinks that the other person would be able to make sense of exactly what they are referring to, then the sentence is probably correct, if not, then it is most probably incorrect. Interviewers should also be mindful that it is based on what the respondent writes and does not include any gestures or explanations they make. If still unsure, interviewers are advised to make a note in the comment box.

If the sentence is illegible the interviewer should ask the respondent what they have written and to write what they say underneath. Under no circumstances should interviewers write it for them from dictation.

**Modifications introduced during ELSA-HCAP2:** The sentence was also typed **exactly** as written (with identical case and punctuation) into CAPI so that this information is also captured electronically

### Praxis/Drawing

The drawing was captured directly in the workbook and the score entered in CAPI as **Correct** or **Incorrect**. If the drawing was not attempted, the interviewer coded this as 'missing' or 'not applicable'

There are 2 criteria for the drawing to be marked as correct (see Figure 3):

- ❖ The two figures must both have **five** sides (they do not have to be perfect or equivalent in size)
- ❖ Must intersect to give a **four-sided figure** in the **middle**

**Additional guidance to assist with scoring**

- ❖ If the Respondent does more than one drawing, ask them to cross out the figure they do NOT want to use. If this step is missed and there are two drawings, score the best drawing
- ❖ The lines must be solid and although they do not have to completely join, most of them should
- ❖ Lines should not be curved
- ❖ Tremor and rotation of the figures can be ignored
- ❖ The Respondent's copy should be below the original and the drawing should be done freehand.
- ❖ Make a note on CAPI if the drawing is not attempted due to physical or visual difficulties or the respondent has any difficulty holding the pen, has bad arthritis or swelling

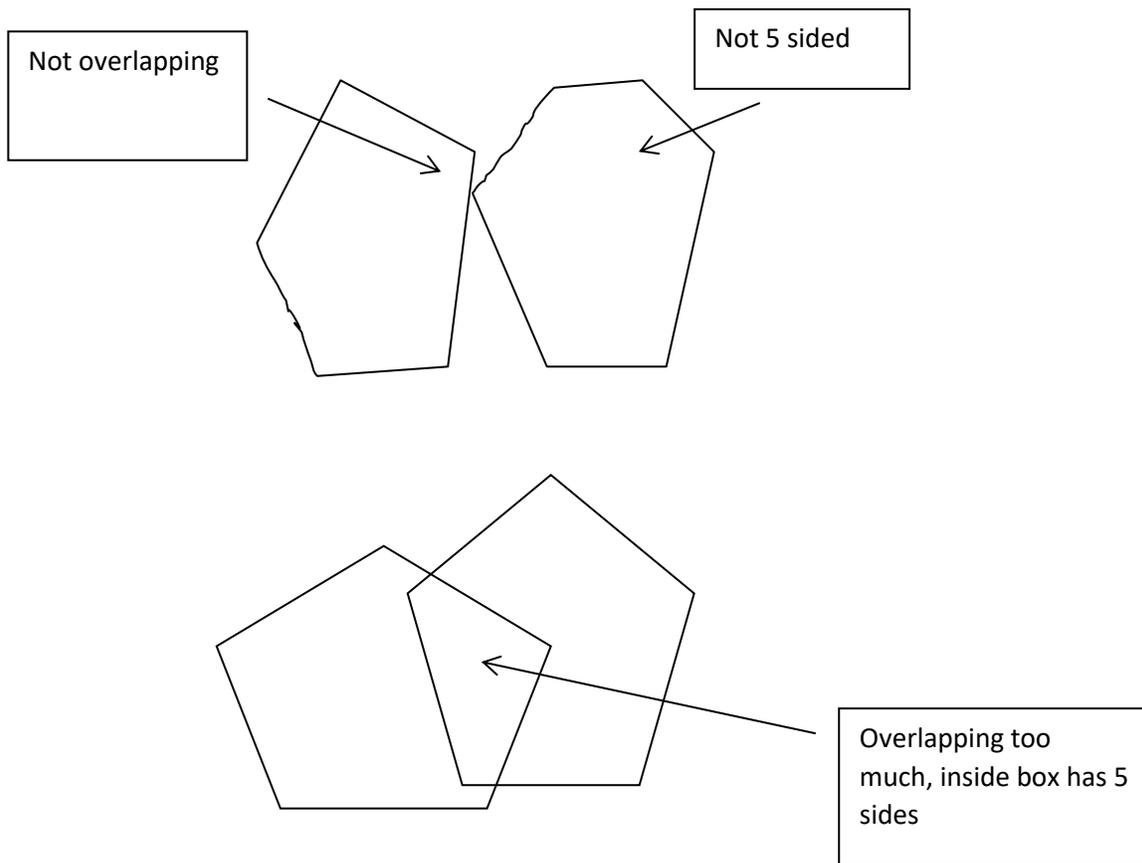


Figure 3: Examples of incorrect drawings with explanations

## HRS-TICS (Telephone Interview for Cognitive Status)

### Introduction

The HRS Telephone Interview for Cognitive Status (HRS-TICS) includes a short set of questions taken originally from the Telephone Interview for Cognitive Status (TICS) used by the Health and Retirement Study (HRS) in the United States. The questions are similar to those in the MMSE but provide additional information about language and factual knowledge. For this interview, three questions from the HRS-TICS that do not overlap with content in other sections of the respondent interview have been selected. This includes identifying two words from the descriptions of two objects (vocabulary) and naming the Prime Minister of the UK.

### Equipment required

None

### Additional guidance for administration and scoring the HRS-TICS

Naming of items from description:

- ❖ **Cutting paper:** Answer must be either scissors or shears to be correct (no other response is acceptable and must be marked as incorrect)
- ❖ **Prickly plant:** 'Cactus' or a name or kind of cactus are acceptable
- ❖ **UK Prime Minister right now:** This answer will vary depending on PM at the time of administration and provided as part of the project instructions.

## The Consortium to Establish a Registry for **Alzheimer's** Disease (CERAD) Word List Memory and Recall

### Introduction

This task includes 10 high imagery words that are visually presented for 2 seconds for each word. In this test there are 3 trials with immediate recall, one trial of delayed recall, and one trial of recognition as described in the sections below.

### Equipment required

CERAD word flipbook

**Modifications introduced during ELSA-HCAP2:** Audio-recordings added an important aspect for quality checking this item. All scoring was captured in CAPI. Also included was a 'Respondent can't read category'. Interviewers were guided to use the Workbook to jot the incorrect words for each incorrect word if they are unable to capture it directly into CAPI and code or capture any issues in comments box.

## Retrieval Fluency (Animal Naming)

### Introduction

This measure assesses verbal retrieval and processing speed. The animal naming test requires respondents to name as many animals as possible in a minute.

### Equipment required

- ❖ Workbook
- ❖ Timer (on CAPI)

### Additional guidance for administration and scoring the Retrieval Fluency (Animal Naming)

Interviewers were guided to give instructions as indicated on the CAPI. Only if the respondent asks, 'does that include birds' or 'does that include insects?' Interviewer may confirm by answering 'yes'. They must **not give any further details** (such as an animal is anything living that is not a plant or the answer cannot be the name of a fictional character etc.).

This is a test for **speed**, so Interviewers should clearly say that the respondent has 60 seconds and to go as fast as they can (as in the instructions on CAPI).

### Acceptable responses

For the purposes of this task, an animal was considered any living thing that is not a plant. Instructions were as follows

- ❖ Different species, genders or generations of animals are counted separately (e.g., dog, spaniel, bull, calf) but redundancies are not (e.g., brown cow, white cow)
- ❖ If they give specific name of pet and the Interviewer is sure it is a pet then this can be counted (e.g., Mr Tiddles the respondent's cat)
- ❖ Extinct animals can be counted
- ❖ Not permissible are animal characters (i.e. Bambi, Nimo)
- ❖ If Interviewer is unsure of an animal a respondent says, this can be counted as **Correct**
- ❖ If an animal is named twice, the first time is correct and the second time is incorrect

**Recommendations for further development or review:** The CAPI timer did not always work, or it was unclear to Interviewers when it had started. This should be corrected for future waves.

Also, Interviewers were given instructions on capturing the score as in HRS-HCAP. This involved pressing the [ENTER] key for every response regardless of whether it was correct or not and the Interviewer was to keep a mental note of incorrect and repeated responses. This seemed to cause some confusion for the ELSA Interviewers. This method is different to the method in the main ELSA study, where Interviewers enter only the correct responses making a note of the incorrect which are then entered as a separate field and deducted. Interviewers also found it difficult to manage between the task of tapping the key on the computer and keeping a tally of the errors.

It is recommended that Interviewers use the workbook to note down as a tally of the correct, incorrect and repeated responses) before entering these numbers into the CAPI. Having this recorded on the Workbook will

also assist with quality checks of this item. To avoid confusion, the method of scoring in the core ELSA study and ELSA-HCAP should be identical.

## Letter Cancellation

### Introduction

This test assesses attention and speed. Respondents are shown a large grid of letters and are asked to scan the grid as quickly as possible in a minute and to cross out as many “P” and “W” letters as they can in that time. Scores include the last letter an individual arrived at, the number of correctly crossed-out letters, the number of missed letters, and the number of incorrectly crossed-out letters. The letter cancellation test (number of target letters or P’s and W’s missed provides a measure of visual attention, speed and accuracy. This test is administered with paper and pencil, and their answer sheet will be returned by the interviewer to the NatCen offices to be scored **after** the interview is completed.

### Equipment required

- ❖ Letter cancellation form (in the Workbook)
- ❖ Timer (on CAPI)

**Modifications introduced during ELSA-HCAP2:** The letter cancellation grid was incorporated into the Workbook (Figure 4). Instructions are included on the CAPI screen which the Interviewer must read out

### Additional guidance for administration and scoring the letter cancellation test

As part of the training, it was emphasised to Interviewers that they could demonstrate by pointing whilst giving instructions. ***‘Start at the top left-hand corner where the arrow is and work along the line. Then go to the beginning of the next line and work along the line again as if you were reading a page...’***

Then continue with the next sentence ***‘Carry on this way crossing out all the P’s and W’s with one mark of pencil and continue to demonstrate as they speak) ‘as in the example at the top of the page’.*** Point to the example at the top of the page.

***‘Please work as quickly and as accurately as you can’.*** As this is a test for speed and accuracy, this as an important point not to be missed.

**Recommendations for further development or review:** A red pen rather than pencil would make it clearer for those analysing the worksheets in the office.

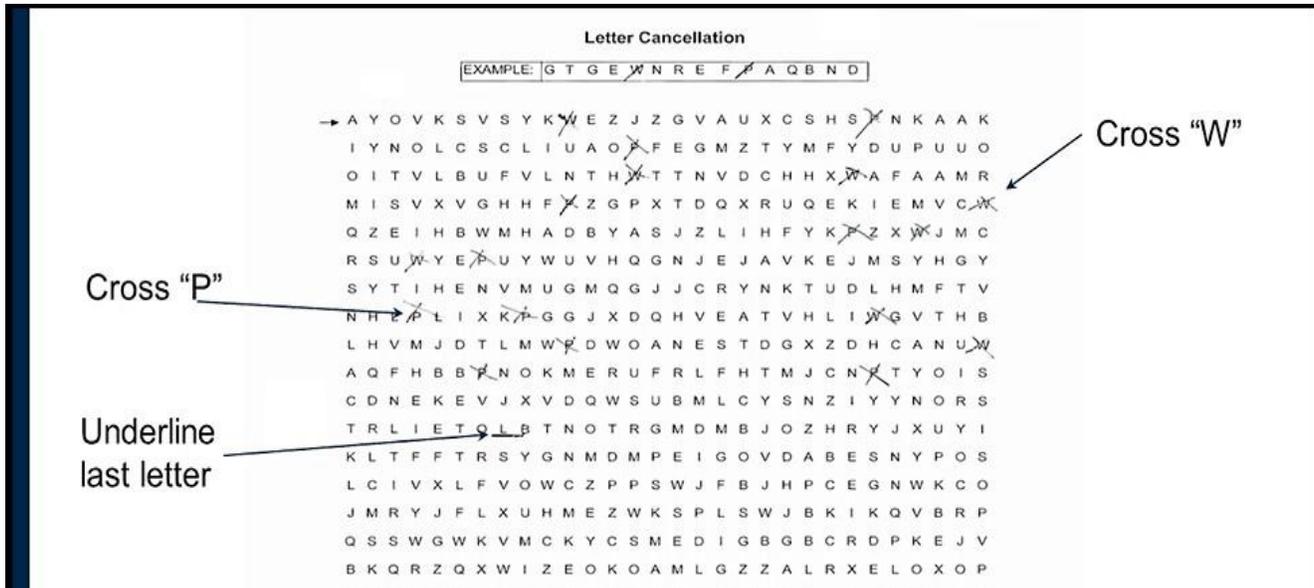


Figure 4: Sample of letter cancellation task crossing out the target letters “P” and “W” and marking of the final letter reached at the end of the 60 seconds (courtesy of TILDA)

## Backward Count

### Introduction

This is a measure of processing speed and attention. Respondents are asked to begin at 100 and to count backwards as fast as possible. They are given 30 seconds, and the number they reach and number of errors are recorded.

### Equipment required

- ❖ Workbook
- ❖ Timer (on CAPI)

**Modifications introduced during ELSA-HCAP2:** Additional information for the Interviewer was included in CAPI and the training to emphasise what was considered to be incorrect to assist the Interviewer.

### Additional guidance for administration and scoring the Backward Count

The respondent should correctly count backwards sequentially: 100, 99, 98, 97, 96, 95, 94, 93, ..... If a respondent skips a number, repeats a number, or says a number out of sequence, this was counted as an error each. The Interviewer was to press [ENTER] for every **error** made by the respondent.

**Example of error:** If the respondent skips several numbers, this counts as **one error**. For example, if they count backwards starting with 71 and go to 60, do not count each number between 71 and 60 as individual errors, just count this as a single error. If the respondent then goes from 60 to 59, this would be a correct response.

If a respondent starts to **count up** and then corrects themselves, i.e., if they say, 80, 81, 79, 78..., this counts as only **one error**.

If a respondent **counts backwards by 10** when numbers end in zero, skipping the numbers in between. For example, they may say, 100, 90, 89, 88, etc. and skip the numbers between 100 to 90, this will count as **one error**.

The Interviewer was to record the last number the respondent reached at the end of the 30 seconds into CAPI.

**Recommendations for further development or review:** This test was identified as not straightforward during the quality checks and by the other sister studies. In ELSA, the last number the respondent reaches is what determines the final score and depending on the number of errors made by the respondent, this can lead to spurious results. For future waves, an additional code should be included for the Interviewer ‘Were there incorrect responses that may impact the score?’ with the response options ‘Yes’, ‘Probably Yes’, ‘No’ and ‘Probably No’. All those with ‘Yes’ or ‘Probably Yes’ should be checked with audio recordings.

## 10/66-CSI-D (Respondent)

### Introduction

This test includes 4 questions derived from the Community Screening Interview for Dementia) surveys to assess cognitive impairment and dementia. The questions evaluate language, knowledge, and the ability to follow directions.

### Equipment needed

None

### Additional guidance for administration and scoring 10/66-CSI-D

None.

There is only one correct answer for ‘**elbow**’. For the other questions (what do you do with a hammer? Where is the nearest local shop, Asking the Respondent to point first to the window and then to the door. acceptable responses are given in CAPI.

## CERAD Word List Recall – Delayed

### Introduction

This is a single trial to recall the list of 10 words from the CERAD Word List Learning and Recall (Immediate) task. Respondents are asked to freely recall as many words as possible from that list. The interviewer records all correct responses as well as intrusions (words not on the original list). Respondents are given up to 2 minutes to complete this task and should not be shown the list of words. Instead, respondents are asked to recall the words repeated the first three trials, from memory, without any visual cues. All instructions are given in CAPI, entering correct, incorrect and no words in the appropriate columns.

### Equipment needed

None

Additional guidance for administration and scoring of delayed CERAD word list recall  
None.

## Wechsler Logical Memory IV (Story Memory – Immediate recall)

### Introduction

This test involves the reading of two stories to the respondent and asking them to recall details from each story at three different points during the interview. The first story is called 'Brave Man' with 6 points to remember, and the second story 'Anna Thompson' is longer with 25 story points to remember.

Respondents are scored based on the number of story points they can immediately recall (to repeat the stories back) and then again after a short delay after hearing each story, when the respondent is asked again to recall the details from both stories. The aim of these tests is to measure the respondent's episodic memory. On the third occasion immediately after the delayed recall, during the 'Recognition Task', the respondent is asked fifteen short questions about the second story only. The questions require a Yes or No response.

### Equipment required

- ❖ Scoring grid for each item of both stories

### Additional guidance for administration and scoring of Wechsler Logical Memory

Interviewers are encouraged to be as familiar as possible with the stories and with the scoring criteria before administering the test as the respondent may recall phrases quickly and out of order. The accepted responses for both stories are listed on a scoring grid and in CAPI. CAPI calculated the score for this item in ELSA-HCAP2.

**Modifications introduced during ELSA-HCAP2:** Scoring on this item was modified to be in line with HRS, TILDA and NICOLA. The scoring grid (**Appendix 2**) was to allow the interviewers to mark the response as the respondent was giving their answer. Responses were then entered into CAPI immediately after the test by the interviewer. Scores were based on an exact or approximate match. HCAP1 responses only included 'exact' matches. In HCAP2, the scoring was as follows Exact match= 2, Approximate match (giving the gist or similar meaning as the original wording) =1. Missed or incorrect = 0.

**Recommendations for further development or review:** To improve the quality check for this test, it would be helpful for Interviewers to also mark on the scoring grid the words that were missed or incorrect as these were not captured. This test can also be scored using the audio-recordings post in the post data collection phase if required.

## CERAD Word List Recognition

### Introduction

This is a recognition trial of the CERAD 10-word list from earlier, where the respondent is visually presented a series of 20 words including 10 from the original list and 10 foils or distractor words. Respondents are asked to identify whether each word was on the list (Yes / No).

### Equipment required

- ❖ CERAD flip book
- ❖ Timer (on CAPI)

### Additional guidance for administration and scoring of CERAD Word List Recognition

None.

## CERAD Constructional Praxis – Immediate

### Introduction

The CERAD constructional praxis measure tests the respondent's ability to copy four geometric forms (Figure 5) of varying difficulty (circle, overlapping rectangles, diamond, and cube). The Constructional PRAXIS test assesses the respondent's constructional, spatial ability, including spatial memory.

### Equipment required

- ❖ Workbook
- ❖ Sharpened pencil

**Modifications introduced during ELSA-HCAP2:** The Workbook included each of the 4 geometric shapes printed separately on the top of a page which was presented to the respondent who was instructed to make a copy below. Additional guidance was given in the training session, in particular for the drawing of the cube which many Interviewers found difficult.

### Additional guidance for administration and scoring of Constructional Praxis (Immediate)

Interviewers were guided to give 1-2 minutes to draw each shape in this task. Although the task is not timed. There is no need to wait if the respondent is seen to struggle. Interviewers should score the last attempt, or the one indicated by the respondent if more than one figure is drawn. Examples of the shapes and how to score them are given below (Figures 5 to 7).

## Constructional PRAXIS - Shapes

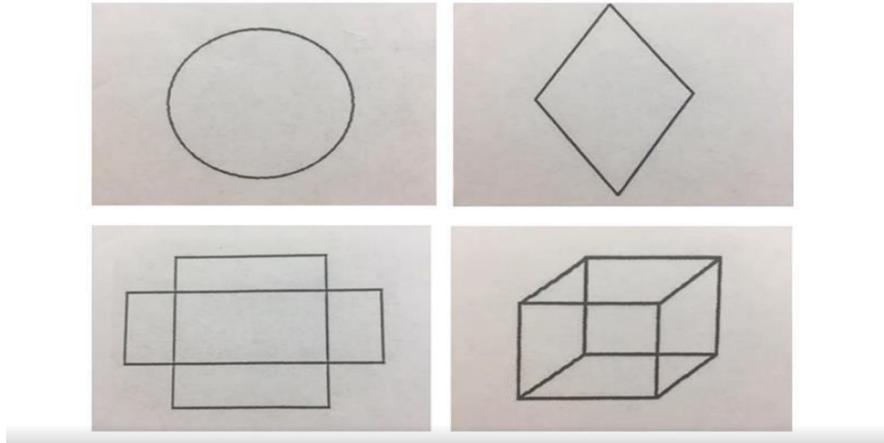


Figure 5: The four geometric forms, a circle, overlapping rectangles, diamond, and cube used in the CERAD task  
(Photograph courtesy of TILDA)

The criteria for correct drawing for each figure are:

Circle (Total possible score = 2)

- ❖ Draws circular shape
- ❖ Closed circle (within 3mm or 1/8th of an inch)

Diamond (Total possible score = 3)

- ❖ Draws 4 sides
- ❖ closes all 4 angles of figure within 3mm or 1/8th of an inch)
- ❖ sides of approximately equal length

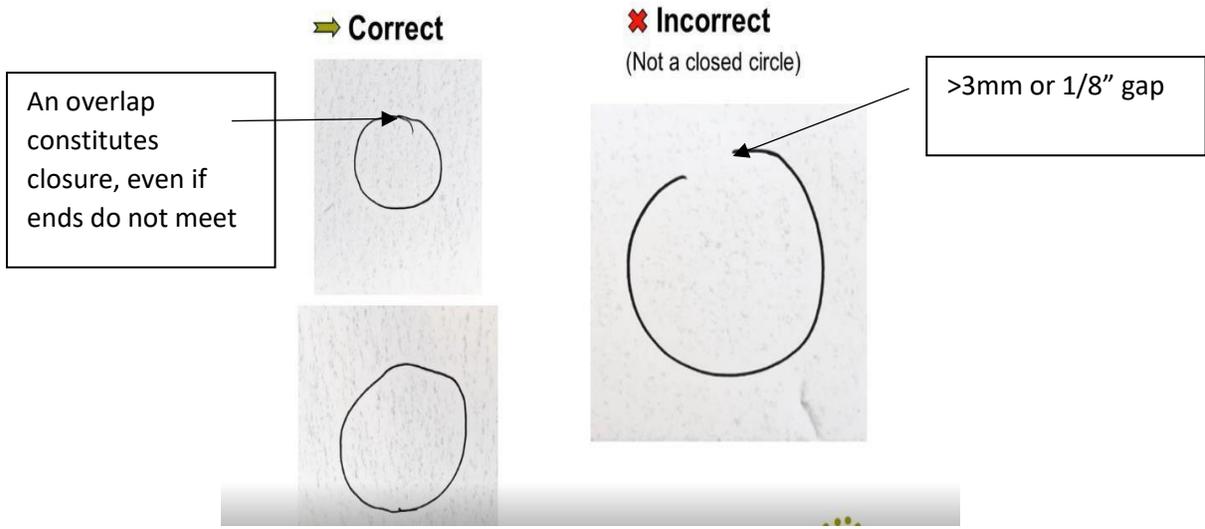
Rectangles (Total possible score = 2)

- ❖ Both figures are 4-sided
- ❖ overlap resembles original

Cube (Total possible score = 4)

- ❖ Figure is 3-dimensional
- ❖ Frontal face is correctly oriented (may be right or left oriented)
- ❖ Internal lines correctly drawn
- ❖ opposite sides are parallel (within 10°)

## Scoring Constructional PRAXIS - Circle



## Scoring Constructional PRAXIS - Diamond

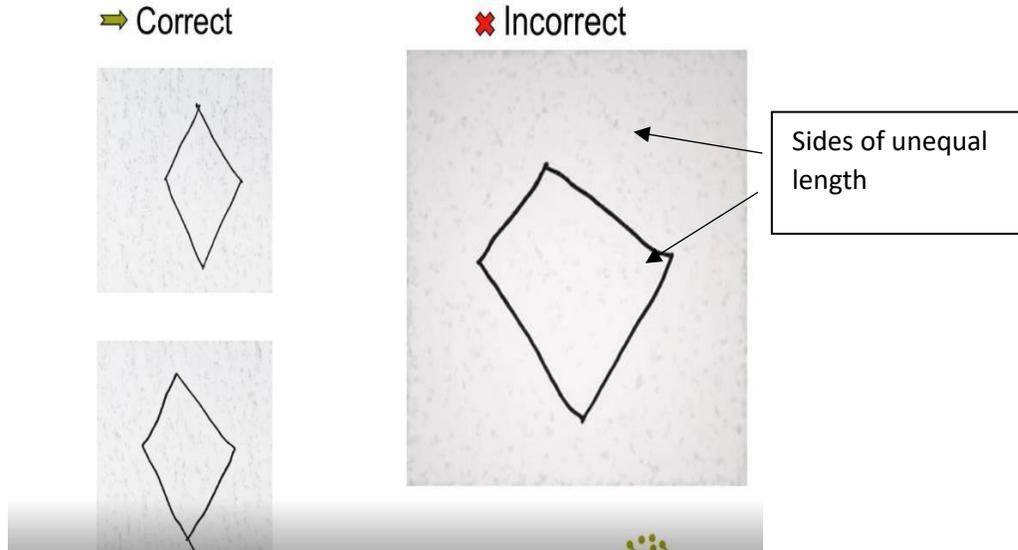


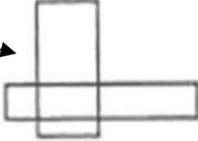
Figure 6: Examples of scoring – construction of Circle and Diamond (Courtesy of TILDA)

## Scoring Constructional PRAXIS – Overlapping Rectangles

➔ Correct

Both rectangles have 4 sides (score 1 point)

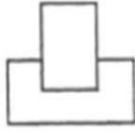
(B)



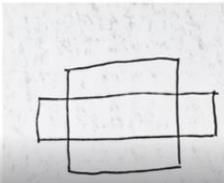
✘ Incorrect

(C) Both Rectangles Not 4-sided and Overlap Does Not Resemble Original

(C)

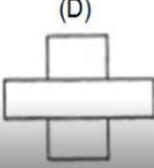


Both rectangles have 4 sides and resemble the original (score 2 points)



(D) Both Rectangles Not 4-sided

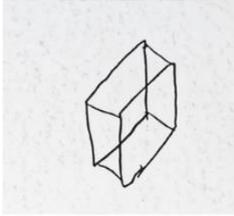
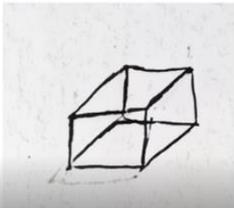
(D)





## Scoring Constructional PRAXIS - Cube

➔ Correct

✘ Incorrect

(Not three dimensional )

(A)



(Internal lines not correctly drawn)

(B)



Figure 7: Examples of scoring – construction of overlapping rectangles and cube (Courtesy of TILDA)

Further information on the drawing of the cube was provided as part of the Interviewer face-to-face training. Details given in **Appendix 3**.

## Symbol-Digit Modalities Test (SDMT)

### Introduction

The Symbol-Digit Modalities Test is commercially available from Western Psychological Services (WPS), USA (<http://www.wpspublish.com/store/p/2955/symbol-digit-modalities-test-sdmt>). Only the official forms can be used for this test. The respondent is given the SDMT form with the set of number-symbol pairings at the top, followed by a row below with symbols only and asked to write the correct number in the spaces below. The first 10 boxes are for practice and should not be timed. The respondent must complete as many pairings as they can in 90 seconds, and their score is the number of correct pairings minus any mistakes or skipped pairings.

### Equipment required

- ❖ Official SDMT sheet
- ❖ Timer (on CAPI)
- ❖ Pencil

### Additional guidance for administration and scoring of SDMT

The two measures to be recorded on the worksheet by the interviewer are:

- ❖ Number of incorrectly completed boxes
- ❖ Number of attempted boxes

**Modifications introduced during ELSA-HCAP2:** The final score was calculated by CAPI (Number of attempted boxes (minus) Number of incorrect).

**Recommendations for further development or review:** Additional training for Interviewers and coders is needed for correct data entry of the scores in CAPI. It was noted during quality checks that a substantial number of cases were incorrectly coded as '0' when they had valid scores. This was partly due to missing information or Interviewers and/or coders making data entry errors based on the score entered for either "Number of attempted boxes" and/or "Number of incorrectly completed boxes".

In addition, there were sheets where the respondent did not start from the correct place (straight after the first 10 practice boxes), but from the next line, this would have reduced the score. Also, sheets where the Interviewer had not separated the two layers of the scoring sheet, and so not scored the "number of attempted boxes".

Also identified as part of the pilot, was the difficulty for left-handed individuals to complete this test. Although this should be picked up in the general comments on any difficulty in administering the HCAP battery.

## CERAD Constructional Praxis – Recall

### Introduction

This is a delayed recall of the geometric shapes drawn in the test of CERAD Constructional Praxis. Respondents are asked to draw the shapes from earlier in the interview to the best of their memory.

### Equipment required

- ❖ Workbook
- ❖ Sharpened pencil

### Additional guidance for administration and scoring of Constructional Praxis – Delayed

Respondents should correctly (meeting the criteria) draw all 4 shapes (circle, diamond, overlapping rectangles and cube) from the CERAD test. If respondent draws the interlocking pentagons as one of 4 (or in addition), this was not to be included this in the score.

## Wechsler Memory Scale IV, Story Memory – Delayed recall

### Introduction

In this section, respondents are asked to think back to the two stories read to them earlier and recall as much about each story as they can.

### Equipment required

- ❖ Scoring grid for each item of both stories

### Additional guidance for administration and scoring of Story (Logical) Memory (Delayed recall)

The scoring is identical to that of the immediate recall of the stories. If the respondent refused or had a missing value for all items of the 'Immediate' memory, the delayed item would be skipped and the respondent would get 'missing' for this item.

## Wechsler Memory Scale IV, Story (Logical) Memory – Recognition

### Introduction

Immediately after the delayed recall, the respondent is asked a series of follow-up story recognition questions based on the Wechsler Logic Memory IV (Anna Thompson) Story. This is a series of 15 questions which ask the respondent to identify (Yes or No) whether a specified story point was part of the story they were read and entered directly into CAPI.

### Equipment required

- ❖ None

### Additional guidance for administration and scoring Story (Logical) Memory – Recognition

- ❖ None.

## Number Series

### Introduction

This test evaluates the respondent's ability for numeric reasoning by presenting a series of 6 individual series of numbers, where one or two numbers are missing at beginning, middle or end of the series. The numbers are read out to the respondent who can write the numbers on the workbook and then asked to solve the missing number (s). The Interviewer starts with an example and gives the correct answers to the respondent so that they understand the task. This test is not timed, so a timer is not required.

### Equipment required

- ❖ Workbook (Blank Page)
- ❖ Sharpened pencil

**Modifications introduced during ELSA-HCAP2:** Previously there was an option 'No paper or pen available'. This was removed as this should not be a reason for missing this test. A separate blank page was included in the workbook for this test. A further option was also added on CAPI for Interviewers to report any additional details if the respondent did not complete this task.

### Additional guidance for Number Series

None

## Raven's Test

### Introduction

This test measures general intelligence and is less affected by language skills than many other instruments. It evaluates picture-based pattern reasoning of varying difficulty. Each question presents a geometric picture with a small section that appears to have been cut out. The Respondent is shown a set of smaller pictures that fit the missing piece and are asked to identify which is the correct one to complete the pattern. The task is **not timed**, but each question is limited to **about 30 seconds** each. There is one practice question before the real test starts. The respondent's answers are entered into CAPI.

### Equipment/materials required

- ❖ Raven's Booklet

### Additional guidance for administration and scoring for Raven's Test

Further details and instructions were included in the Interviewer training as below:

This task starts with the interviewer opening the Raven's Booklet to the first item, item A1, which is an example where the interviewer can provide the correct answer so that the respondent understands the task as shown in Figure 8. The Interviewer is given instructions to be followed verbatim in CAPI. There are sixteen total items in the Raven's test, not including the first practice question. Not every question from the booklet is administered during the survey, The response options for each question are: 'Correct' or 'Incorrect'. Only answers as shown on computer screen are marked as 'Correct' otherwise, the answer should be coded as 'incorrect'.

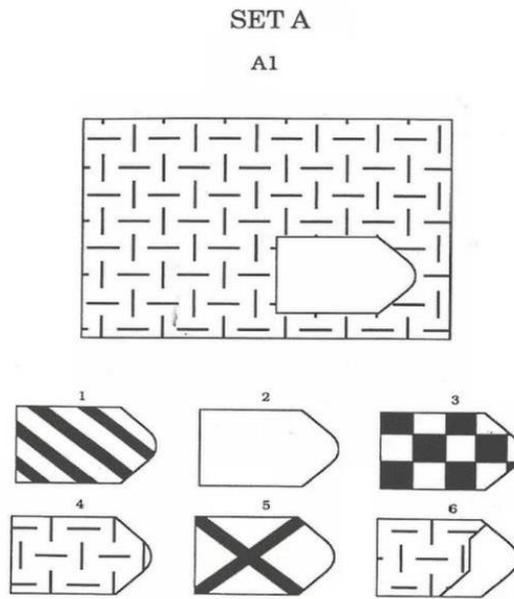


Figure 8: The first item on the Raven's test used as an example (Courtesy of TILDA)

Here are some general rules for administering the Raven's test:

- ❖ The respondent should not have a pencil during this test. So, interviewers should retrieve the pencil that was used in the previous test. This is to avoid marking up the pages of the Raven's Booklet.
- ❖ Only one page at a time is shown to the respondent as it could be confusing or distracting for the respondent if two pages are opened at once.
- ❖ Interviewers are advised to pass their hand across all possible options, but taking care not to pause over any response option. The interviewer should also refrain from using a pen or pencil to point to the shapes, again to avoid marking the booklet.

## Trail Making Test (Parts A and B)

### Introduction

This is a timed test administered in two parts, A and B, and the goal is to assess the respondent's processing speed, and executive function. The respondent is asked to draw lines connecting consecutively numbered circles on a worksheet (Part A) and connect consecutively numbered and lettered circles on another worksheet (Part B) by alternating between the numbers and letters. Errors to the respondent are highlighted and corrected by asking the Respondent go back to the previous circle and move on to the next correct one. Respondents are given up to **five** minutes to complete each task.

### Equipment required

- ❖ TIMER (CAPI)
- ❖ Workbook (Trails A and B Forms with samples for each part)
- ❖ Pencil

## Additional guidance for administration and scoring for the Trail Making Test

Interviewers were guided that this is best done on a table. They were also provided with solutions to the Trails to help them to become familiar with the test. See **Appendix 4** for marked up examples provided to the interviewers.

**Modifications introduced during ELSA-HCAP2:** The trails test was included as part of the Accreditation for ELSA-HCAP2 (that was not in HCAP1). Here, Interviewers had to read out instructions correctly and show understanding of how to guide the respondent doing the trails appropriately, correct them if they went off course, and use the CAPI to time the exercise accurately.

**Recommendations for further development or review:** The instructions for this test are long and Interviewers struggled with the length. Even during training, Interviewers were prone to summarising or skipping details. More practice is required in the training and Accreditation of Interviewers.

## CES-D Depressive Symptoms

### Introduction

To measure the impact of current depressive symptoms on test scores. The goal of the CES-D is to assess the presence of a respondent's depressive symptoms.

### Equipment required

- ❖ None

### Additional guidance for administration and scoring for CES-D inventory

None

## Refusals and Don't Know responses

Additional response codes were included in CAPI for 'Don't know'. Interviewers were guided to differentiate between 'Don't know', 'refusals' and 'Not applicable' and where possible, to try to get a reason for refusal and note it down in the comments box.

## Interviewer's Comments

Comments and vignettes (brief descriptions) from interviewers are especially important for obtaining information that may be missing particularly from respondents with poorer cognition that may prevent them from providing valid responses to some of the questions. Interviewers are not expected to make a judgement about the dementia status but simply to provide observational and other information that is not captured by the interview data entered into CAPI.

If an interview is incomplete, interviewers should try and add in the comments box why and at what question the interview was stopped. The reason for terminating is important. If the interviewer feels that this may be due to a cognitive problem or that the respondent was unwell or too frail, then they should make a note of this. If the interview was ended due an interruption, or because the respondent had decided they had done enough, or needed to go out shopping, or to another appointment, then this would be very helpful to know. We need to be able to understand whether data is missing due to poor cognition, or for another reason.

If a respondent is unable to complete any of the tasks due to a physical/functional limitation such as poor eyesight, or can't hold pen due to arthritis or stroke, this should also be included in the comments box.

Comments should be informative but brief and should not repeat what has already been collected as part of the interview.

## Appendix 1: Documentation and script for Accreditation

### 1.A. Accreditation Instructions, Script and Scoring

Please check that the interviewer has positioned themselves so that they can clearly see what you are doing. **You will need to see the CAPI screen** but explain that when they are interviewing the respondent shouldn't be able to see their screen. Monitor the interviewer as they go through the CAPI to ensure that they're following and reading out all instructions.

Please **follow the script below** as the interviewer goes through the accreditation program.

**If the interviewer makes a mistake or omits an action, please do not stop them** at that point, but make a note on the current form to discuss at the end. Notes can be about scored items counting towards accreditation, or other specific points you notice, or more general advice such as about organising the materials and equipment around them. **They should write on the front of the worksheets** as instructed in CAPI (serial, check letter, your first name and their ID).

If the interviewer does not score correctly on an item counting towards accreditation, they will be given time to practice that section further before being re-accredited on just that section. If the only comments you have recorded do not relate to the accreditation criteria, they have passed that section.

-----  
**Name of Interviewer:** \_\_\_\_\_

**Date of accreditation:** \_\_\_\_\_

**Name of accreditor:** \_\_\_\_\_  
 -----

## Section 1: MMSE

**ACCREDITATION CRITERIA:**

- *Tick in the box on the right-hand side if the interviewer administered and scored each item correctly.*

**ACCREDITOR INSTRUCTIONS FOR MODULE:**

- For the questions in the MMSE section, unless you are instructed otherwise please follow the instructions read out to you by the interviewer correctly or provide them with the answer to a question given below.

- Please check that the interviewer knows to write the Serial Number, Chklet, first name and Interviewer ID on the top of each worksheet.

<b><u>Orientation questions</u></b>	
INTERVIEWER: I am now going to ask you some questions about time and place.  (INTERVIEWER will click through a screen about copyright that they should NOT read aloud.)	
<b>TICK IN BOX IF CORRECT</b>	
INTERVIEWER: What is the year?	
- Accreditor: <a href="#">2023</a>	
INTERVIEWER: What is the season?	
- Accreditor: <a href="#">Spring</a>	
INTERVIEWER: What is the month of the year?	
- Accreditor: <a href="#">Answer correctly March/April</a>	
INTERVIEWER: What is the day of the week?	
- Accreditor: <a href="#">[Answer correctly, e.g. Monday, Tuesday, etc.]</a>	
INTERVIEWER: What is the date?	
- Accreditor: <a href="#">[Answer correctly, e.g. 1<sup>st</sup>, 27<sup>th</sup>, etc.]</a>	
INTERVIEWER: What is the country?	
- Accreditor: <a href="#">UK</a>	
INTERVIEWER: What is the county?	
- Accreditor: <a href="#">East Anglia</a> <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer scores the response as incorrect (as the answer is a region and not a county).	
INTERVIEWER: What is the city or town?	
- Accreditor: <a href="#">Cambridge</a>	
INTERVIEWER: What is the road or street name?	
- Accreditor: <a href="#">North Road</a> <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer scores the response as incorrect (the correct answer is North Street)	
INTERVIEWER: What is the house number or building name?	
- Accreditor: <a href="#">10</a>	

**Repeating words**

INTERVIEWER: Listen carefully. I am going to say three words. You say them back after I stop. Ready? Apple [PAUSE] Penny [PAUSE] Table [PAUSE]. Now repeat those words back to me.	
- Accreditor: <i>Apple, Penny, Table.</i>	
INTERVIEWER: Now keep those words in mind. I am going to ask you to say them again in a few minutes.	

**Serial Sevens**

INTERVIEWER: Now let's try some subtraction of numbers. One hundred minus 7 equals what?	
- Accreditor: <i>[wait till interviewer asks for next answer before each one] 93, 86, 78, 71, 63</i> <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer does not correct an incorrect answer.	

**Objects, instructions, repetitions**

INTERVIEWER: What were those three words I asked you to remember?	
- Accreditor: <i>I've forgotten – can you repeat them please? [Wait to see how interviewer responds] I think one was Apple but I can't remember any others.</i> <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer refuses to repeat the words and does not give any hints. The interviewer should say something like 'Just have a go'.	
INTERVIEWER: What is this? [Pointing to a pencil]	
- Accreditor: <i>A pencil</i> <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer has a pen or pencil ready to use.	
INTERVIEWER: What is this? [Pointing to a watch OR another object]	
- Accreditor: <i>A watch / [name other object]</i> <b>ACCREDITOR INSTRUCTION:</b>	

<p>Check that the interviewer does not use a FitBit. If they do use a FitBit, make a note and at end of accreditation remind them that they can't use a FitBit at the interviews.</p>	
<p>INTERVIEWER: Now I am going to ask you to repeat what I say. Ready? "No ifs, ands, or buts." Now you say that.</p>	
<ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Answer incorrectly]: no if, ands, or buts</a>  <b>ACCREDITOR INSTRUCTION:</b>                      Check that the interviewer scores the response as incorrect. It is incorrect as you should say 'if' instead of 'ifs'.</li> </ul>	
<p>INTERVIEWER: Listen carefully because I am going to ask you to do something. Take this paper in your right hand [pause], fold it in half [pause], and put it on the floor (or table).</p>	
<ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Follow instructions correctly and take paper in right hand, fold in half and put on the floor (or table)]</a>  <b>ACCREDITOR INSTRUCTION:</b>                      Ensure the interviewer reads out ALL the instructions before they hand over the piece of paper. Please check that the interviewer does not hand the piece of paper directly into your right hand.</li> </ul>	
<p>INTERVIEWER: Please read this and do what it says. [Showing Showcard 3: Now close your eyes]</p>	
<ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Follow instruction and close eyes]</a>  <b>ACCREDITOR INSTRUCTION:</b>                      Ensure the interviewer gets out the showcard at this question and puts it out of sight afterwards.</li> </ul>	
<p>INTERVIEWER: Please write a sentence</p>	
<ul style="list-style-type: none"> <li>- Accreditor: <a href="#">Oh, I don't know what to write</a>  <b>ACCREDITOR INSTRUCTION:</b>                      Wait for the interviewer to prompt you by saying "Write about the weather" before writing the sentence "Today it is Raining.". Check the interviewer scores the sentence as correct and copies the sentence verbatim at the next question.</li> <li>- Accreditor: <a href="#">[Write the sentence "Today it is Raining."]</a></li> </ul>	

**Pentagon drawing – use the separate pre-completed Pentagons worksheet**

<p>INTERVIEWER: Please copy this design just underneath it on the same sheet of paper.</p>	
<ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Present the pre-completed Pentagons worksheet to be marked]</a></li> </ul>	

<p><b>ACCREDITOR INSTRUCTIONS:</b> The interviewer should mark this figure as correct, because it shows two five-sided figures that intersect to form a four-sided figure.</p> <p>- Accreditor: <a href="#">Did I get that correct?</a></p> <p><b>ACCREDITOR INSTRUCTIONS:</b> The interviewer should not provide any feedback. They can give general ‘you have done fine’ but shouldn’t answer whether items are correct or not.</p>	
<b>MMSE ACCREDITATION SCORING (SCORE AT END):</b>	
Number of items administered and scored correctly (out of 20):	
Was pentagon drawing scored correctly?	Y/N
To pass MMSE accreditation, interviewer must:	
<ul style="list-style-type: none"> <li>- Score 16 or more points</li> <li>- Score the pentagon drawing correctly</li> </ul>	
<b>Did interviewer pass MMSE accreditation?</b>	<b>Y/N</b>

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## Section 2 – Logical Memory - Immediate

<p><b>ACCREDITATION CRITERIA:</b></p> <ul style="list-style-type: none"> <li>• <i>Score recalled points from story 1 (Brave Man) correctly (exact and approx. matches and N/A or incorrect)</i></li> <li>• <i>Score recalled points from story 2 (Anna Thompson) correctly (exact and approx. matches and N/A or incorrect)</i></li> </ul>
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**ACCREDITOR INSTRUCTIONS FOR MODULE:**

- The interviewer will read out a story and ask the accreditor to recall as many details as they can.
- The interviewer will score the answers onto the worksheet and then transfer the answers into CAPI.
- The interviewer will then read out a longer story and again ask the accreditor to recall details.
- The interviewer will score the answers onto the worksheet and then transfer the answers into CAPI.
- It is important that the interviewer follows the guidance about what counts as an exact match and an approximate match.
- For each story, you will provide answers as given below, and then **ask the interviewer to show you the laptop screen where they have recorded the answers given** so you can check if they recorded these correctly (remember they should use the worksheet and then transfer the answers into CAPI).

**Story 1: Brave Man**

INTERVIEWER: Now I will read a short story. I will then ask you to repeat as much of the story as you can remember. I want you to listen very carefully because I want you to try to tell me the whole story with as many details as you can remember.

INTERVIEWER: “Three children were alone at home and the house caught on fire. A brave man managed to climb in a back window and carry them to safety. Aside from minor cuts and bruises, all were well.”

INTERVIEWER: Now I would like you to tell me the story in as much detail as possible.

- Accreditor: [PLEASE READ SLOWLY] Okay. Umm. There were three children. They were home alone, and the house caught on fire. Umm. A brave man broke in and the children were rescued. They had minor cuts and bruises.

**ACCREDITOR INSTRUCTION:**

PLEASE CHECK THAT THE INTERVIEWER HAS SCORED THE STORY AS SCORED BELOW

	<b>Exact Match</b>	<b>Approx Match</b>	<b>N/A or incorrect</b>	<b>Accreditor: Tick if correctly scored</b>
1. Three children	X			
2. House caught (on) fire	X			
3. Brave man	X			
4. Safety		X		
5. Minor cuts and bruises	X			
6. All were well			X	
<b>TOTAL SCORE (out of 6)</b>				

**Story 2: Anna Thompson**

INTERVIEWER: I am going to read another short story to you. Listen carefully and try to remember it just the way I say it, as close to the same words as you can remember. When I am through, I want you to tell me everything I read to you. You should tell me all you can remember even if you are not sure. Ready?

INTERVIEWER: Anna Thompson of South London, employed as a cook in a school canteen, reported at the police station that she had been mugged on the High Street the night before and robbed of fifty-six pounds. She had four small children, the rent was due, and they had not eaten for two days. The police, touched by the woman’s story, held a collection for her

INTERVIEWER: Tell me everything you can remember about this story. Start at the beginning.

- Accreditor: [PLEASE READ SLOWLY] Anna, umm, Simpson, of South London, umm, who worked in a school canteen. Umm, she said that she'd been mugged on the High Street. The thieves took, umm, sixty-eight pounds. She had four small children. Umm. The rent was due and they hadn't eaten for four days. The police held a collection.

**ACCREDITOR INSTRUCTION:**

PLEASE CHECK THAT THE INTERVIEWER HAS SCORED THE STORY AS SCORED BELOW

	Exact Match	Approximate Match	N/A or incorrect	Accreditor: Tick if correctly scored
1. Anna	X			
2. Thompson			X	
3. South	X			
4. London	X			
5. Employed		X		
6. As a cook			X	
7. In a school	X			
8. Canteen	X			
9. Reported			X	
10. Police			X	
11. Station			X	
12. Mugged	X			
13. High Street	X			
14. Night before			X	
15. Robbed			X	
16. Fifty-six pounds			X	
17. Four	X			
18. Small children	X			
19. Rent was due	X			
20. Not eaten		X		
21. Two days			X	
22. Police	X			
23. Touched (by the woman's story)			X	
24. Held a collection	X			
25. For her			X	
<b>TOTAL SCORE (out of 25)</b>				

<b>STORY TELLING ACCREDITATION SCORING:</b>	
Story 1: Number of items scored correctly (out of 6)	
Story 2: Number of items scored correctly (out of 25)	
<b>TOTAL (out of 31)</b>	
To pass story telling accreditation, interviewer must: - Score 25 or more points	
<b>Did interviewer pass story telling accreditation?</b>	<b>Y/N</b>

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## Section 3 – Trail Making Test

**ACCREDITATION CRITERIA:**

- *Note if the interviewer corrected mistakes made immediately after*
- *Note if interviewer started the CAPI timer correctly for each item and with no delays.*
- *Note if interviewer followed all on-screen instructions*

**ACCREDITOR INSTRUCTIONS FOR MODULE:**

- **Please check that the interviewer knows to write the Serial Number, Chklet, first name and Interviewer ID on the top of each worksheet.** There are two worksheets for this module (A and B).
- The interviewer will instruct the accreditor on how to complete the two versions of the trail making test, using both the sample boxes on the front of the sheet and the full version of the test on the back for the timed test.
- Please ensure they follow the interviewer instructions.
- Please make one deliberate mistake on each of the samples and on each of the timed tests as indicated below
- **Please check that each time you make a mistake the interviewer stops you and takes you back to re-start from the point where you made the mistake.**
- **Please check that the interviewer starts and stops the timer.** They should start the CAPI timer when they say “Begin” by entering <1> AND ENTER and moving to the next screen. They should stop the CAPI timer as soon as you finish the test by pressing <1> and ENTER. Note the CAPI times how long it takes the respondent to do the test.

**Trail Making Sample A**

<p>INTERVIEWER: On this page are some numbers. Begin at number 1 [POINT] and draw a line from 1 to 2 [POINT], 2 to 3 [POINT], 3 to 4 [POINT], and so on, in order, until you reach the end [POINT TO CIRCLE MARKED 'END']. Draw the lines as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Follow instructions but skip a number, e.g. go from 4 to 6 skipping 5]</a></li> </ul>	<p>Instructions followed? Y/N</p> <p>CAPI timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
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**Trail Making A1**

<p>INTERVIEWER: Complete this the same way. (Begin at number 1 [POINT TO 1] and draw a line from 1 to 2 [POINT TO 2], 2 to 3 [POINT TO 3], 3 to 4 [POINT TO 4], and so on, in order, until you reach the end [POINT TO CIRCLE MARKED 'END'].) Remember to work as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Follow instructions but at one point lift the pencil off the paper]</a></li> </ul>	<p>Instructions followed? Y/N</p> <p>CAPI timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
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**Trail Making Sample B**

<p>INTERVIEWER: On this page there are some numbers and letters. Begin at 1 [POINT] and draw a line from 1 to A [POINT TO A], A to 2 [POINT TO 2], 2 to B [POINT TO B], B to 3 [POINT to 3], 3 to C [POINT TO C], and so on, in order until you reach the end [POINT TO THE CIRCLE MARKED "END"]. Draw the lines as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Follow instructions but skip a skip a letter, e.g. go from 2 to 3 skipping B]</a></li> </ul>	<p>Instructions followed? Y/N</p> <p>CAPI timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
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**Trail Making B1**

<p>INTERVIEWER: Complete this the same way. (Begin at number 1 [POINT TO 1] and draw a line from 1 to A [POINT TO A], A to 2 [POINT TO 2], 2 to B [POINT TO B], B to 3 [POINT to 3], 3 to C [POINT TO C], and so on, in order, until you reach the end [POINT TO THE CIRCLE MARKED "END"]. Remember, first you have a number [POINT to 1], then a letter [POINT TO A], then a number [POINT TO 2], then a letter [POINT to B], and so on. Do not skip around, but</p>	<p>Instructions followed? Y/N</p> <p>CAPI timer started and ended correctly? Y/N</p> <p>Mistakes</p>
---	--

<p>go from one circle to the next in the proper order.) Draw the lines as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: <a href="#">[Start with the wrong circle but then follow instructions]</a></li> </ul>	corrected? Y/N
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<b>TRAIL MAKING ACCREDITATION SCORING (code as yes if did for 3 out of 4 of the trails):</b>	
Did interviewer follow the instructions correctly?	Y/N
Did interviewer start and end CAPI timer correctly and with no delays?	Y/N
Did interviewer correct all mistakes?	Y/N
To pass trail making accreditation, interviewer must:	
- Score yes to all questions above	
<b>Did interviewer pass trail making accreditation?</b>	<b>Y/N</b>

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## Section 4 – General Observations

<b>GENERAL ACCREDITATION SCORING:</b>	
Did the interviewer bring all the relevant documents and materials to the accreditation?	Y/N
Did the interviewer handle documents correctly, for example only getting out as needed, packing away when finished and not showing story telling worksheet (as it contains the answers)?	Y/N
Did interviewer read questions clearly and slowly?	Y/N
Did interviewer NOT provide feedback during the accreditation?	Y/N

<b>GENERAL ACCREDITATION SCORING:</b>	
To pass general element of accreditation, interviewer must:	
- Score yes to all questions above	
Did interviewer pass general element of accreditation?	Y/N

## Section 5 – Shape Drawing

The interviewer will be asked to complete the shape drawing accreditation sheet as part of the briefing. Please record their scores below.

Criteria	Score
• Scored Circle drawing correctly (out of 2 points)	
• Scored Diamond drawing correctly (out of 3 points)	
• Scored Rectangles drawing correctly (out of 2 points)	
• Scored Cube 1 drawing correctly (out of 4 points)	
• Scored Cube 2 drawing correctly (out of 4 points)	
<b>TOTAL SCORE (out of 15)</b>	

<b>SHAPE DRAWING ACCREDITATION SCORING:</b> To pass shape drawing accreditation, interviewer must: - Score 9 or more points.	
Did interviewer pass shape drawing accreditation?	Y/N

## Section 6 – Summary

Did interviewer pass MMSE accreditation?	Y/N
Did interviewer pass story telling accreditation?	Y/N
Did interviewer pass trail making accreditation?	Y/N
Did interviewer pass general accreditation?	Y/N
Did interviewer pass shape drawing accreditation	Y/N

**If any of the above questions are no, please reaccredit the section(s).**

<b>Further feedback:</b>
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## 1.B. Re-accreditation Instructions, Script and Scoring

Please check that the interviewer has positioned themselves so that they can clearly see what you are doing. **You will need to see the CAPI screen** but explain that when they are interviewing the respondent shouldn't be able to see their screen. Monitor the interviewer as they go through the CAPI to ensure that they're following and reading out all instructions.

Please **follow the script below** as the interviewer goes through the accreditation program.

**If the interviewer makes a mistake or omits an action, please do not stop them** at that point, but make a note on the current form to discuss at the end. Notes can be about scored items counting towards accreditation, or other specific points you notice, or more general advice such as about organising the materials and equipment around them. **They should write on the front of the worksheets** as instructed in CAPI (serial, check letter, your first name and their ID).

If the interviewer does not score correctly on an item counting towards accreditation, please discuss with the team on how to proceed. If the only comments you have recorded do not relate to the accreditation criteria, they have passed that section.

-----  
**Name of Interviewer:** \_\_\_\_\_

**Date of accreditation:** \_\_\_\_\_

**Name of accreditor:** \_\_\_\_\_  
 -----

### Section 1: MMSE

**ACCREDITATION CRITERIA:**

- *Tick in the box on the right-hand side if the interviewer administered and scored each item correctly.*

**ACCREDITOR INSTRUCTIONS FOR MODULE:**

- For the questions in the MMSE section, unless you are instructed otherwise please follow the instructions read out to you by the interviewer correctly or provide them with the answer to a question given below.
- **Please check that the interviewer knows to write the Serial Number, Chklet, first name and Interviewer ID on the top of each worksheet.**

<b><u>Orientation questions</u></b>	
INTERVIEWER: I am now going to ask you some questions about time and place.  (INTERVIEWER will click through a screen about copyright that they should NOT read aloud.)	
TICK IN BOX IF CORRECT	
INTERVIEWER: What is the year?	
- Accreditor: <a href="#">2023</a>	
INTERVIEWER: What is the season?	
- Accreditor: <a href="#">Spring</a>	
INTERVIEWER: What is the month of the year?	
- Accreditor: <a href="#">Answer correctly March/April</a>	
INTERVIEWER: What is the day of the week?	
- Accreditor: <a href="#">[Answer correctly, e.g. Monday, Tuesday, etc.]</a>	
INTERVIEWER: What is the date?	
- Accreditor: <a href="#">I can't remember</a> <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer scores the response as don't know using CTRL+K	
INTERVIEWER: What is the country?	
- Accreditor: <a href="#">UK</a>	
INTERVIEWER: What is the county?	
- Accreditor: <a href="#">Cambridgeshire</a>	
INTERVIEWER: What is the city or town?	
- Accreditor: <a href="#">Cambridge</a>	
INTERVIEWER: What is the road or street name?	
- Accreditor: <a href="#">North Street</a>	
INTERVIEWER: What is the house number or building name?	
- Accreditor: <a href="#">10</a>	

**Repeating words**

INTERVIEWER: Listen carefully. I am going to say three words. You say them back after I stop. Ready? Apple [PAUSE] Penny [PAUSE] Table [PAUSE]. Now repeat those words back to me.	
- Accreditor: <a href="#">Apple, Penny, Table.</a>	
INTERVIEWER: Now keep those words in mind. I am going to ask you to say them again in a few minutes.	

**Serial Sevens**

INTERVIEWER: Now let's try some subtraction of numbers. One hundred minus 7 equals what?	
- Accreditor: [wait till interviewer asks for next answer before each one] 93, 86, 78, 71, 63 <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer does not correct an incorrect answer.	

**Objects, instructions, repetitions**

INTERVIEWER: What were those three words I asked you to remember?	
- Accreditor: Apple, Penny...can you repeat the third one please? [Wait to see how interviewer responds] I think it was Table. <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer refuses to repeat the words and does not give any hints. The interviewer should say something like 'Just have a go'.	
INTERVIEWER: What is this? [Pointing to a pencil]	
- Accreditor: A pencil <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer has a pen or pencil ready to use.	
INTERVIEWER: What is this? [Pointing to a watch OR another object]	
- Accreditor: A watch / [name other object] <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer does not use a FitBit. If they do use a FitBit, make a note and at end of accreditation remind them that they can't use a FitBit at the interviews.	
INTERVIEWER: Now I am going to ask you to repeat what I say. Ready? "No ifs, ands, or buts." Now you say that.	
- Accreditor: [Answer incorrectly]: no ifs, <u>and</u> , or buts <b>ACCREDITOR INSTRUCTION:</b> Check that the interviewer scores the response as incorrect. It is incorrect as you should say 'and' instead of 'ands'.	

INTERVIEWER: Listen carefully because I am going to ask you to do something. Take this paper in your right hand [pause], fold it in half [pause], and put it on the floor (or table).	
<ul style="list-style-type: none"> <li>- Accreditor: [Follow instructions correctly and take paper in right hand, fold in half and put on the floor (or table)]</li> </ul> <p><b>ACCREDITOR INSTRUCTION:</b> Ensure the interviewer reads out ALL the instructions before they hand over the piece of paper. Please check that the interviewer does not hand the piece of paper directly into your right hand.</p>	
INTERVIEWER: Please read this and do what it says. [Showing Showcard 3: Now close your eyes]	
<ul style="list-style-type: none"> <li>- Accreditor: [Follow instruction and close eyes]</li> </ul> <p><b>ACCREDITOR INSTRUCTION:</b> Ensure the interviewer gets out the showcard at this question and puts it out of sight afterwards.</p>	
INTERVIEWER: Please write a sentence	
<ul style="list-style-type: none"> <li>- Accreditor: Oh, I don't know what to write</li> </ul> <p><b>ACCREDITOR INSTRUCTION:</b> Wait for the interviewer to prompt you by saying "Write about the weather" before writing the sentence "Today it is Raining.". Check the interviewer scores the sentence as correct and copies the sentence verbatim at the next question.</p> <ul style="list-style-type: none"> <li>- Accreditor: [Write the sentence "Today it is Raining."]</li> </ul>	

**Pentagon drawing – use the separate pre-completed Pentagons worksheet**

INTERVIEWER: Please copy this design just underneath it on the same sheet of paper.	
<ul style="list-style-type: none"> <li>- Accreditor: [Present the pre-completed Pentagons worksheet to be marked]</li> </ul> <p><b>ACCREDITOR INSTRUCTIONS:</b> The interviewer should mark this figure as correct, because it shows two five-sided figures that intersect to form a four-sided figure.</p> <ul style="list-style-type: none"> <li>- Accreditor: Did I get that correct?</li> </ul> <p><b>ACCREDITOR INSTRUCTIONS:</b> The interviewer should not provide any feedback. They can give general 'you have done fine' but shouldn't answer whether items are correct or not.</p>	

<b>MMSE ACCREDITATION SCORING (SCORE AT END):</b>	
Number of items administered and scored correctly (out of 20):	
Was pentagon drawing scored correctly?	Y/N
To pass MMSE accreditation, interviewer must: - Score 16 or more points - Score the pentagon drawing correctly	
<b>Did interviewer pass MMSE accreditation?</b>	<b>Y/N</b>

---

## Section 2 – Logical Memory - Immediate

### ACCREDITATION CRITERIA:

- *Score recalled points from story 1 (Brave Man) correctly (exact and approx. matches and N/A or incorrect)*
- *Score recalled points from story 2 (Anna Thompson) correctly (exact and approx. matches and N/A or incorrect)*

### ACCREDITOR INSTRUCTIONS FOR MODULE:

- The interviewer will read out a story and ask the accreditor to recall as many details as they can.
- The interviewer will score the answers onto the worksheet and then transfer the answers into CAPI.
- The interviewer will then read out a longer story and again ask the accreditor to recall details.
- The interviewer will score the answers onto the worksheet and then transfer the answers into CAPI.
- It is important that the interviewer follows the guidance about what counts as an exact match and an approximate match.
- For each story, you will provide answers as given below, and then **ask the interviewer to show you the laptop screen where they have recorded the answers given** so you can check if they recorded these correctly (remember they should use the worksheet and then transfer the answers into CAPI).

### Story 1: Brave Man

INTERVIEWER: Now I will read a short story. I will then ask you to repeat as much of the story as you can remember. I want you to listen very carefully because I want you to try to tell me the whole story with as many details as you can remember.

INTERVIEWER: “Three children were alone at home and the house caught on fire. A brave man managed to climb in a back window and carry them to safety. Aside from minor cuts and bruises, all were well.”

INTERVIEWER: Now I would like you to tell me the story in as much detail as possible.

- Accreditor: [PLEASE READ SLOWLY] A brave man rescued three children who were at home alone when their house caught on fire. The children were fine and only had minor cuts and bruises.

**ACCREDITOR INSTRUCTION:**

PLEASE CHECK THAT THE INTERVIEWER HAS SCORED THE STORY AS SCORED BELOW

	Exact Match	Approx Match	N/A or incorrect	Accreditor: Tick if correctly scored
1. Three children	X			
2. House caught (on) fire	X			
3. Brave man	X			
4. Safety		X		
5. Minor cuts and bruises	X			
6. All were well		X		
<b>TOTAL SCORE (out of 6)</b>				

**Story 2: Anna Thompson**

INTERVIEWER: I am going to read another short story to you. Listen carefully and try to remember it just the way I say it, as close to the same words as you can remember. When I am through, I want you to tell me everything I read to you. You should tell me all you can remember even if you are not sure. Ready?

INTERVIEWER: Anna Thompson of South London, employed as a cook in a school canteen, reported at the police station that she had been mugged on the High Street the night before and robbed of fifty-six pounds. She had four small children, the rent was due, and they had not eaten for two days. The police, touched by the woman’s story, held a collection for her

INTERVIEWER: Tell me everything you can remember about this story. Start at the beginning.

- Accreditor: [PLEASE READ SLOWLY] Anna Smith who lived in South London. She worked as a cook in a school canteen. The night before she was walking along the High Street and had been robbed of twenty pounds. She went to the, er, police station to report it. They hadn’t eaten for two days and her two small children, erm...the people at the police station were so touched that they started a collection for her. I think that is all.

**ACCREDITOR INSTRUCTION:**

PLEASE CHECK THAT THE INTERVIEWER HAS SCORED THE STORY AS SCORED BELOW

	<b>Exact Match</b>	<b>Approximate Match</b>	<b>N/A or incorrect</b>	<b>Accreditor: Tick if correctly scored</b>
1. Anna	X			
2. Thompson			X	
3. South	X			
4. London	X			
5. Employed		X		
6. As a cook	X			
7. In a school	X			
8. Canteen	X			
9. Reported		X		
10. Police	X			
11. Station	X			
12. Mugged			X	
13. High Street	X			
14. Night before	X			
15. Robbed	X			
16. Fifty-six pounds			X	
17. Four			X	
18. Small children	X			
19. Rent was due			X	
20. Not eaten	X			
21. Two days	X			
22. Police	X			
23. Touched (by the woman's story)		X		
24. Held a collection		X		
25. For her	X			
<b>TOTAL SCORE (out of 25)</b>				

<b>STORY TELLING ACCREDITATION SCORING:</b>	
Story 1: Number of items scored correctly (out of 6)	
Story 2: Number of items scored correctly (out of 25)	
<b>TOTAL (out of 31)</b>	
To pass story telling accreditation, interviewer must: - Score 25 or more points	
<b>Did interviewer pass story telling accreditation?</b>	<b>Y/N</b>

## Section 3 – Trail Making Test

### ACCREDITATION CRITERIA:

- *Note if the interviewer corrected mistakes made immediately after*
- *Note if interviewer started the CAPI timer correctly for each item and with no delays.*
- *Note if interviewer followed all on-screen instructions*

### ACCREDITOR INSTRUCTIONS FOR MODULE:

- **Please check that the interviewer knows to write the Serial Number, Chklet, first name and Interviewer ID on the top of each worksheet.** There are two worksheets for this module (A and B).
- The interviewer will instruct the accreditor on how to complete the two versions of the trail making test, using both the sample boxes on the front of the sheet and the full version of the test on the back for the timed test.
- Please ensure they follow the interviewer instructions.
- Please make one deliberate mistake on each of the samples and on each of the timed tests as indicated below
- **Please check that each time you make a mistake the interviewer stops you and takes you back to re-start from the point where you made the mistake.**
- **Please check that the interviewer starts and stops the timer.** They should start the CAPI timer when they say “Begin” by entering <1> AND ENTER and moving to the next screen. They should stop the CAPI timer as soon as you finish the test by pressing <1> and ENTER. Note the CAPI times how long it takes the respondent to do the test.

### Trail Making Sample A

<p>INTERVIEWER: On this page are some numbers. Begin at number 1 [POINT] and draw a line from 1 to 2 [POINT], 2 to 3 [POINT], 3 to 4 [POINT], and so on, in order, until you reach the end [POINT TO CIRCLE MARKED 'END']. Draw the lines as fast as you can, without lifting the pencil from the paper. Ready?</p> <p>- Accreditor: <a href="#">[Follow instructions but skip a number, e.g. go from 4 to 6 skipping 5]</a></p>	<p>Instructions followed? Y/N</p> <p>CAPI timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
--	---

**Trail Making A1**

<p>INTERVIEWER: Complete this the same way. (Begin at number 1 [POINT TO 1] and draw a line from 1 to 2 [POINT TO 2], 2 to 3 [POINT TO 3], 3 to 4 [POINT TO 4], and so on, in order, until you reach the end [POINT TO CIRCLE MARKED 'END'].) Remember to work as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: [Follow instructions but at one point lift the pencil off the paper]</li> </ul>	<p>Instructions followed? Y/N</p> <p>CAPi timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
---	---

**Trail Making Sample B**

<p>INTERVIEWER: On this page there are some numbers and letters. Begin at 1 [POINT] and draw a line from 1 to A [POINT TO A], A to 2 [POINT TO 2], 2 to B [POINT TO B], B to 3 [POINT to 3], 3 to C [POINT TO C], and so on, in order until you reach the end [POINT TO THE CIRCLE MARKED "END"]. Draw the lines as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: [Follow instructions but skip a skip a letter, e.g. go from 2 to 3 skipping B]</li> </ul>	<p>Instructions followed? Y/N</p> <p>CAPi timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
---	---

**Trail Making B1**

<p>INTERVIEWER: Complete this the same way. (Begin at number 1 [POINT TO 1] and draw a line from 1 to A [POINT TO A], A to 2 [POINT TO 2], 2 to B [POINT TO B], B to 3 [POINT to 3], 3 to C [POINT TO C], and so on, in order, until you reach the end [POINT TO THE CIRCLE MARKED "END"]. Remember, first you have a number [POINT to 1], then a letter [POINT TO A], then a number [POINT TO 2], then a letter [POINT to B], and so on. Do not skip around, but go from one circle to the next in the proper order.) Draw the lines as fast as you can, without lifting the pencil from the paper. Ready?</p> <ul style="list-style-type: none"> <li>- Accreditor: [Start with the wrong circle but then follow instructions]</li> </ul>	<p>Instructions followed? Y/N</p> <p>CAPi timer started and ended correctly? Y/N</p> <p>Mistakes corrected? Y/N</p>
--	---

<b>TRAIL MAKING ACCREDITATION SCORING (code as yes if did for 3 out of 4 of the trails):</b>	
Did interviewer follow the instructions correctly?	Y/N
Did interviewer start and end CAPI timer correctly and with no delays?	Y/N
Did interviewer correct all mistakes?	Y/N
To pass trail making accreditation, interviewer must: - Score yes to all questions above	
<b>Did interviewer pass trail making accreditation?</b>	<b>Y/N</b>

## Section 4 – General Observations

<b>GENERAL ACCREDITATION SCORING:</b>	
Did the interviewer bring all the relevant documents and materials to the accreditation?	Y/N
Did the interviewer handle documents correctly, for example only getting out as needed, packing away when finished and not showing story telling worksheet (as it contains the answers)?	Y/N
Did interviewer read questions clearly and slowly?	Y/N
Did interviewer NOT provide feedback during the accreditation?	Y/N

<b>GENERAL ACCREDITATION SCORING:</b>	
To pass general element of accreditation, interviewer must: - Score yes to all questions above	
Did interviewer pass general element of accreditation?	Y/N

## Section 5 – Shape Drawing

The interviewer will be asked to complete the shape drawing accreditation sheet as part of the briefing. Please record their scores below.

<b>Criteria</b>	<b>Score</b>
• Scored Circle drawing correctly (out of 2 points)	
• Scored Diamond drawing correctly (out of 3 points)	
• Scored Rectangles drawing correctly (out of 2 points)	
• Scored Cube 1 drawing correctly (out of 4 points)	
• Scored Cube 2 drawing correctly (out of 4 points)	
<b>TOTAL SCORE (out of 15)</b>	

<b>SHAPE DRAWING ACCREDITATION SCORING:</b> To pass shape drawing accreditation, interviewer must: - Score 9 or more points.	
Did interviewer pass shape drawing accreditation?	Y/N

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## Section 6 – Summary

Did interviewer pass MMSE accreditation?	Y/N
Did interviewer pass story telling accreditation?	Y/N
Did interviewer pass trail making accreditation?	Y/N
Did interviewer pass general accreditation?	Y/N
Did interviewer pass shape drawing accreditation	Y/N

**If any of the above questions are no, please reaccredit the section(s).**

<b>Further feedback:</b>
--------------------------



1.C. Accreditation worksheets

**P16541.01**

**ELSA 50+ Memory and Thinking**

# **Worksheet Booklet To be used at briefing for accreditation ONLY**

INTERVIEWER: PLEASE FILL IN THE FOLLOWING DETAILS:

Serial Number	ChkLet
<input type="text"/>	<input type="text"/>

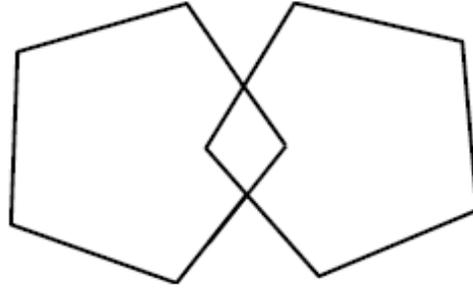
Respondent First Name	Interviewer No
<input type="text"/>	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>

**Worksheet 1: MMSE\_Writing**

*(BLANK SHEET)*

**Please write a sentence.**

## Worksheet 2: MMSE\_Drawing

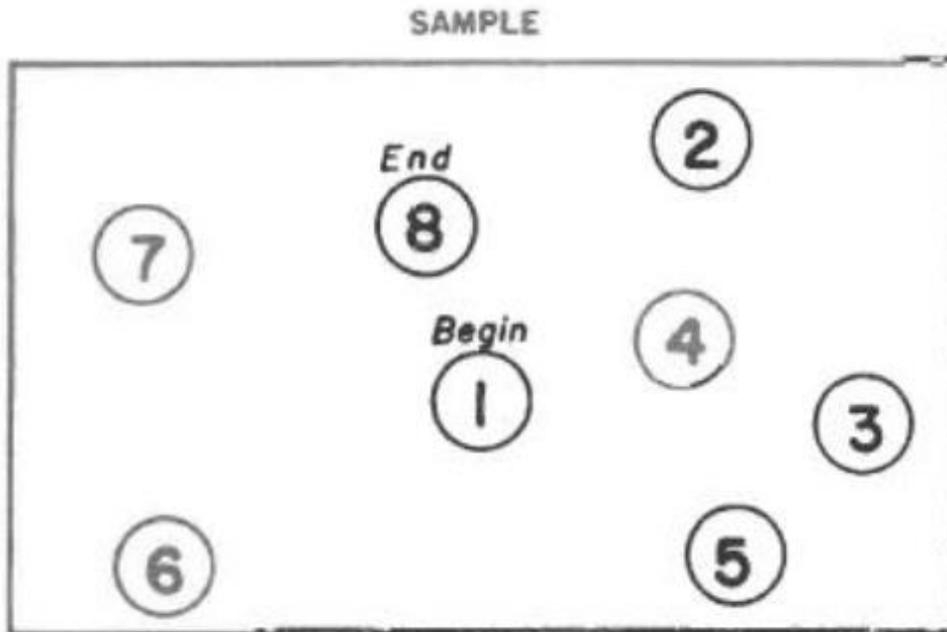


MMSE – United Kingdom/English – Version of 1 Jul 15 – MAPI Institute.  
ID6915 / MMSE\_AU1.0\_eng-GB.doc

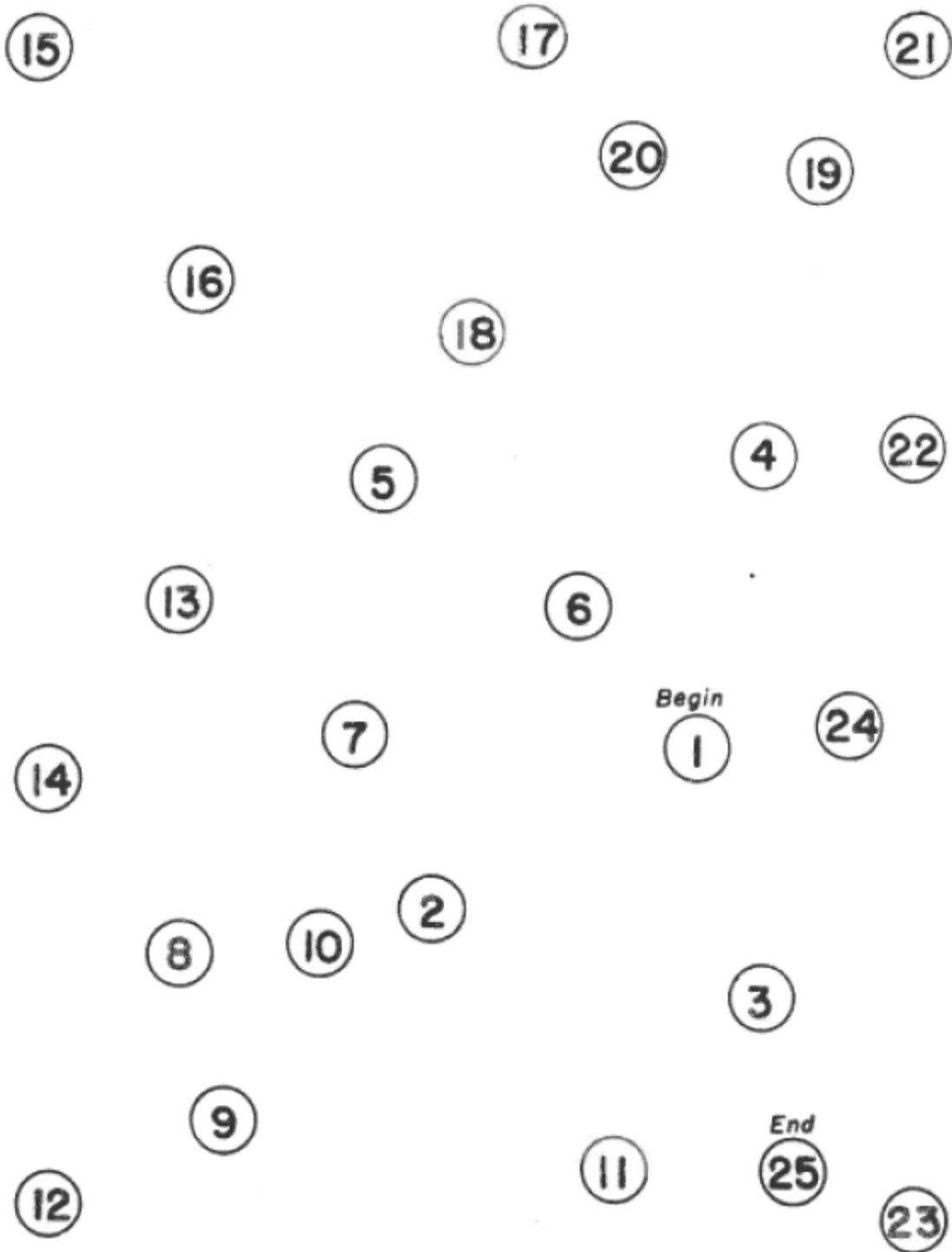
Trail Making Sample A (TMT\_SA1)

TRAIL MAKING

Part A



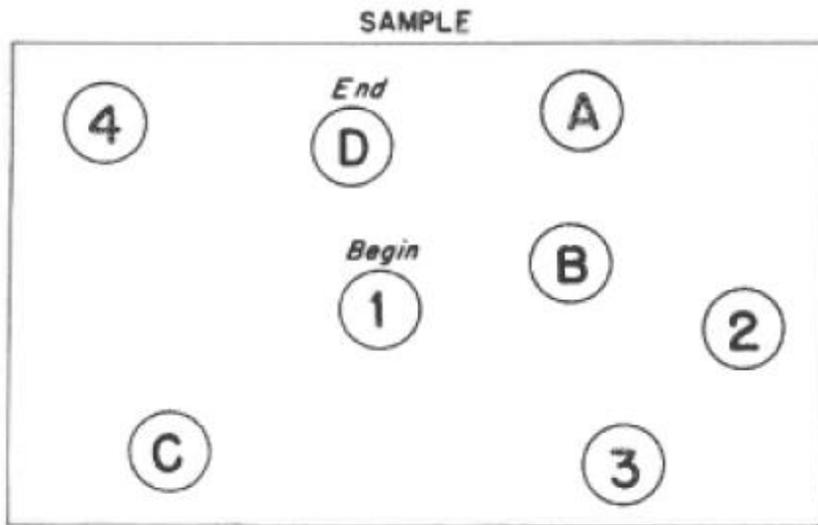
### Trail Making Test A (TMT\_A1)



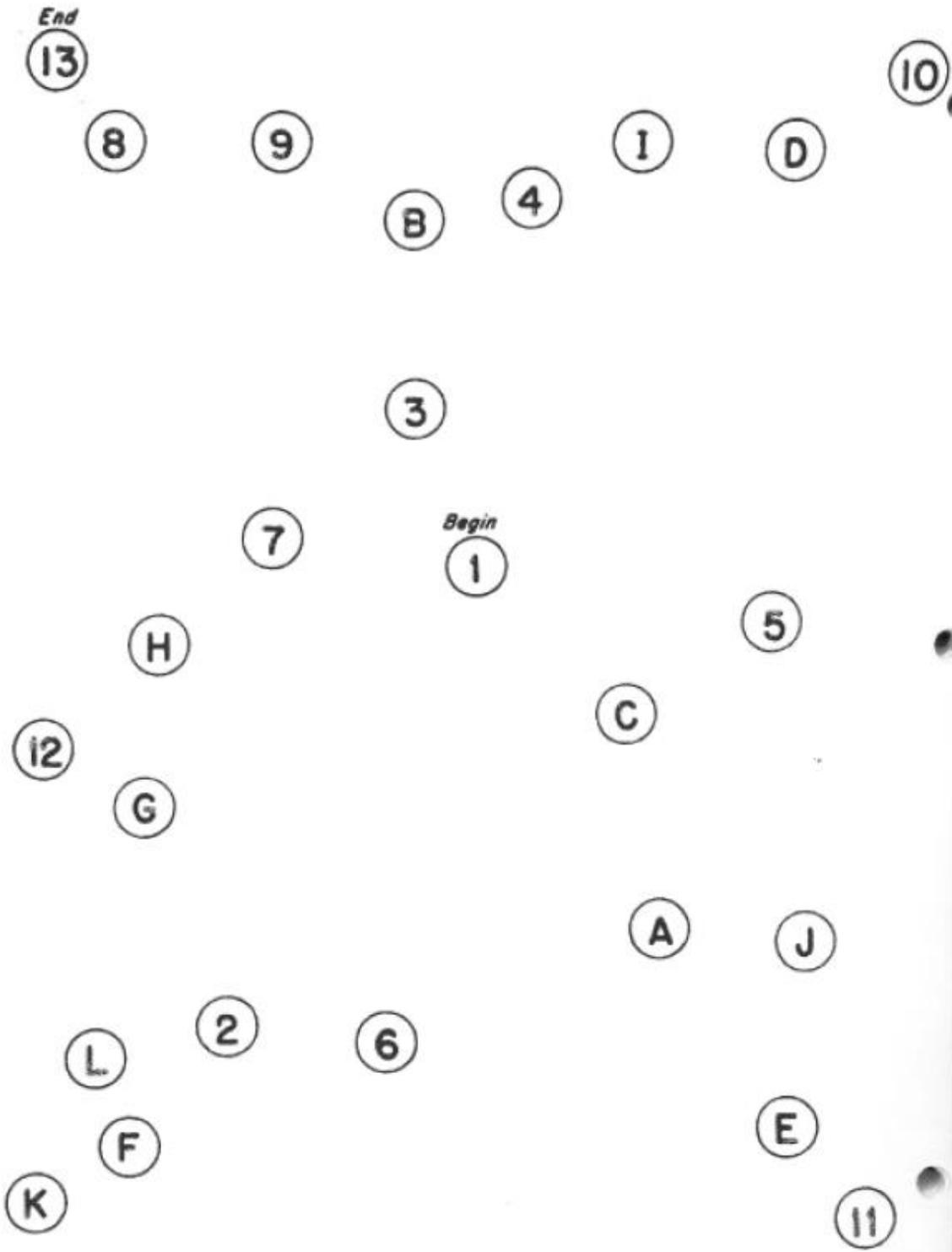
Trail Making Sample B (TMT\_SB1)

TRAIL MAKING

Part B



### Trail Making B (TMT\_B1)





## Appendix 2: Wechsler Logical Memory IV Scoring Grid

Please score below whether the respondent mentions the items on the left-hand side.

- If the respondent recalls the story using the verbatim answer category wording below, code as an 'exact' match.
- If the items are recalled but not as exactly written, code as 'approximate match'.
- If they do not mention an item or recall the story incorrectly, code as 'N/A'.

### STORY 1:

	Exact Match	Approximate Match	N/A
1. Three children			
2. House caught (on) fire			
3. Brave man			
4. Safety			
5. Minor cuts and bruises			
6. All were well			

### STORY 2:

	Exact Match	Approximate Match	N/A
1. Anna			
2. Thompson			
3. (Of) South			
4. London			
5. Employed			
6. As a cook			
7. In a school			
8. Canteen			
9. Reported			
10. Police			
11. Station			
12. mugged			
13. High Street			
14. night before			
15. robbed			
16. fifty-six pounds			
17. four			
18. Small children			
19. rent was due			
20. not eaten			
21. two days			
22. police			
23. Touched woman's story			
24. Held a collection			
25. For her			

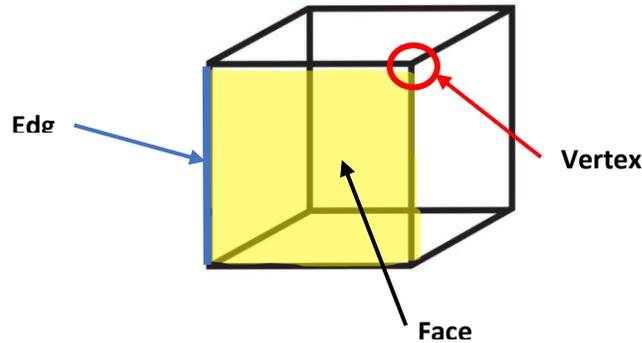


## Appendix 3: Guidelines on Scoring of the Cube Shape for CERAD (Constructional Praxis)

### The cube Shape

A cube has:

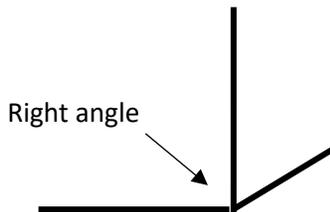
- 6 Faces
- 12 Edges
- 8 Vertices



### Scoring Criteria

A. Did the Respondent draw a 3-dimensional figure?

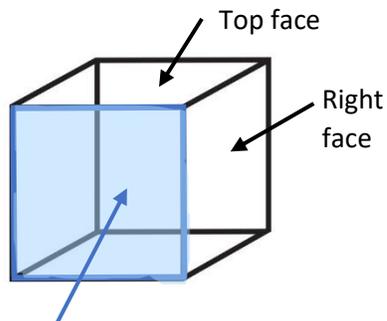
A shape with **at least one vertex** represents a 3-D figure. Code as **YES** if you can identify one vertex in the shape drawn.



A vertex = 3 connected edges with a right angle formed between 2 edges.

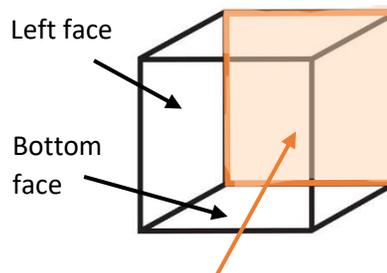
B. Did the Respondent draw the frontal face correctly oriented (either left or right)?

A frontal face is a **perfect square**. A cube has **2 frontal faces**: a left one and a right one as shown below. Code as **YES** if the shape has either a left or right frontal face **WITH** the correct orientation.



**Left frontal Face**

A correct orientation = the 2 other visible faces are the right one and top one.

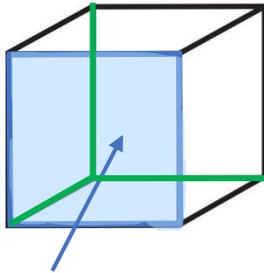


**Right frontal Face**

A correct orientation = the 2 other visible faces are the left one and the bottom one.

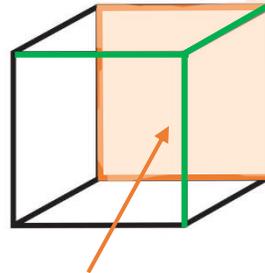
C. Did the Respondent draw the internal lines correctly?

A cube has **6 inner edges** and 6 outer ones (making the total of 12 edges). Depending on the orientation of the cube, there are **3 internal lines** as shown below. Code as **YES** if you can identify the 3 inner lines in the shape drawn.



**Left-oriented cube**

with 3 inner lines shown in green

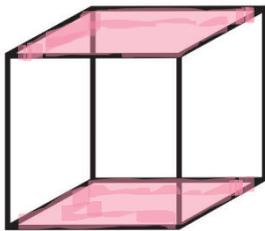


**Right-oriented cube**

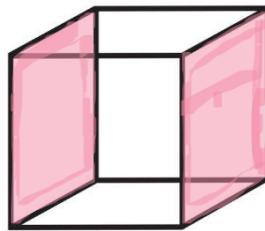
with 3 inner lines shown in green

D. Did the Respondent draw opposite sides that are parallel (within 10 degrees)?

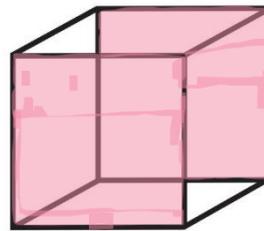
A cube has 6 faces with **3 pairs of opposite sides**. For 2 opposite sides to be parallel, the corresponding edges (4 pairs) need to be parallel (within a 10-degree variation each). Code as **YES** if ALL 3 pairs have parallel opposite sides as shown below:



Pair 1: Top and bottom faces



Pair 2: Right and left faces



Pair 3: Front and back faces

Appendix 4: Marked-up examples of Trails Tests (A and B)

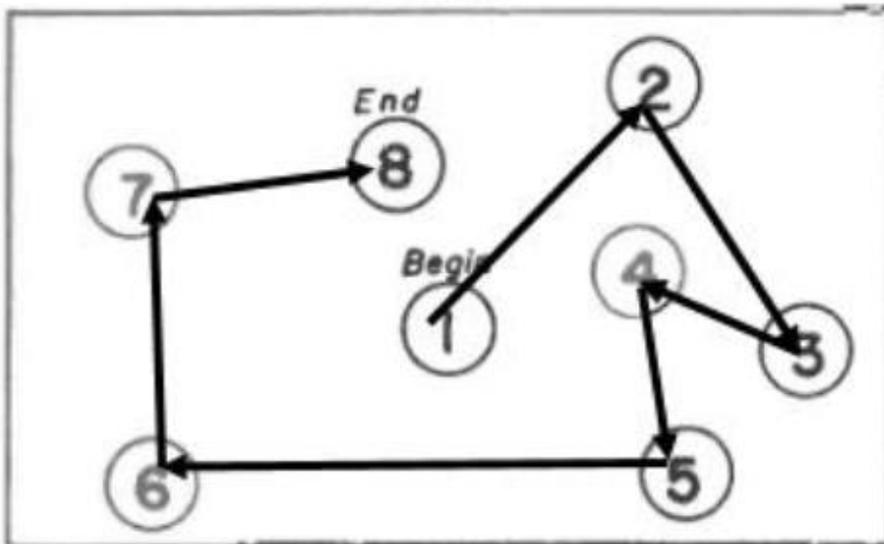
**SAMPLE A**

Training Sample

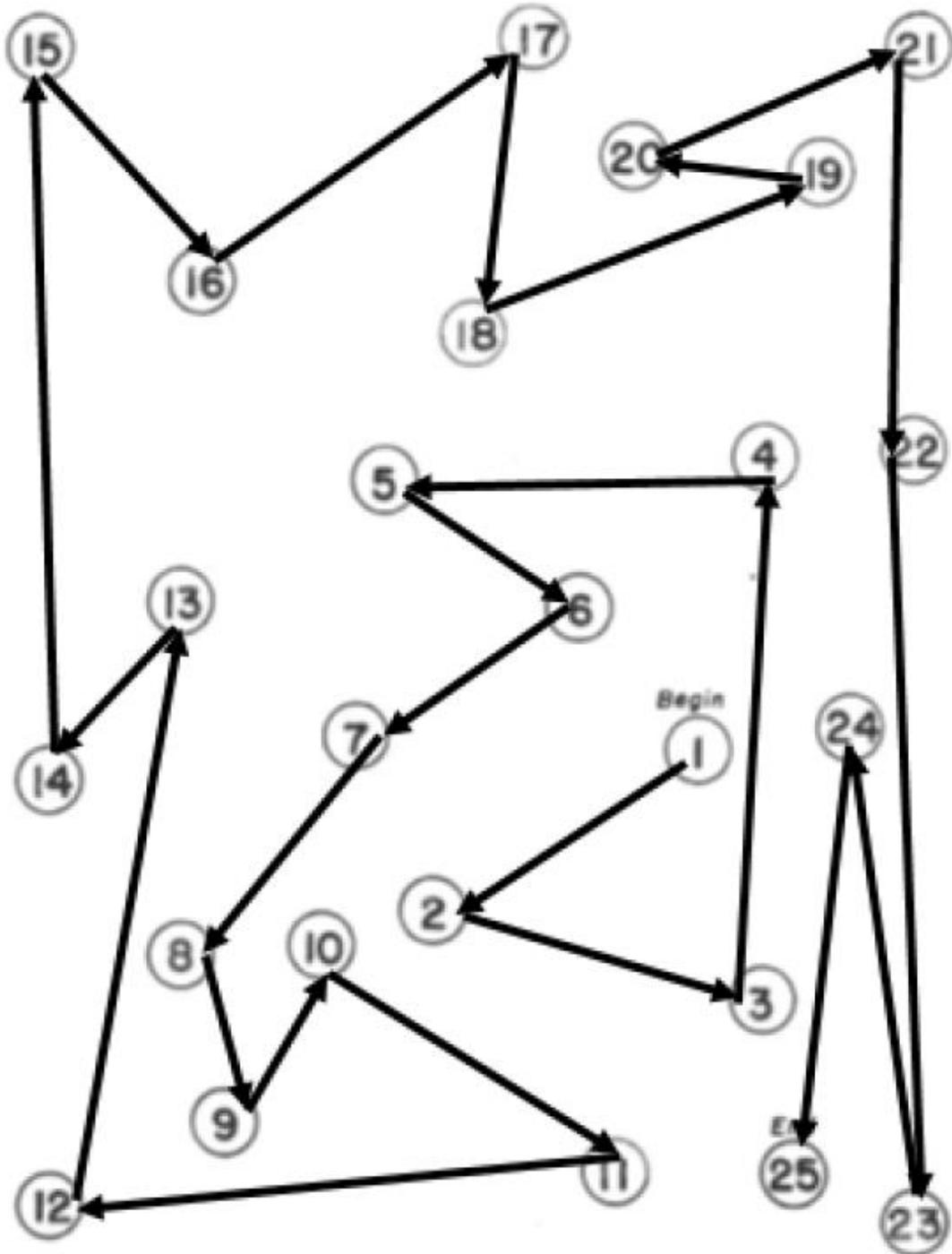
**TRAIL MAKING**

**Part A**

SAMPLE



TEST A

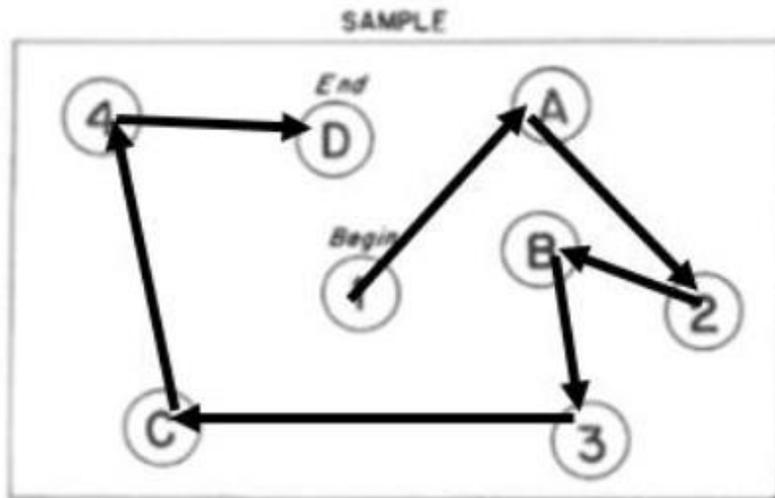


Training Sample

# SAMPLE B

## TRAIL MAKING

### Part B



Training Sample

TEST B

