



Higher Psychology (C212 12)

Research Investigation Guidelines
(revised)

December 2004



General Information

These guidelines are intended to aid teachers and lecturers in the production of the Research Investigation in the National Course in Psychology at Higher level. The Research Investigation forms 20% of the Course award for Higher Psychology and must be submitted to SQA by the date stated in the current *Operational Guide for Schools* (available on SQA's website).

It should be noted that candidates who are not being presented for the Higher Course award (ie. only attempting Units) are not required to undertake a Research Investigation.

It is also important to note that, although candidates can work together to collect data, submissions must be made individually, and must be the **candidate's own work**.

A summary of the BPS Ethical Principles for conducting research with human participants is included in this document. However, teachers/lecturers should make themselves aware of the full Code of Conduct, Ethical Principles and Guidelines as published by BPS (2000). These can be obtained from:

The British Psychological Society
St Andrews House
48 Princess Road East
Leicester
LE1 7DR

Telephone: 0116 254 9568

E-mail: mail@bps.org.uk
Web address: www.bps.org.uk

Included in this document is 'A Guide to Ethics for Teachers and Students of Psychology at pre-degree Level', produced by the Association for the Teaching of Psychology (2003). The ATP can be contacted c/o the British Psychological Society (postal address above).

Web address: www.theatp.com

Under no circumstances should any participants under the age of 16 be used in any Research Investigation. Failure to adhere to this guidance will result in a serious marks penalty.

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1 Course Outline

The National Course in Psychology at Higher level articulates with, and provides progression from, the Intermediate 2 Psychology Course. The Course aims to provide an opportunity for reinforcing and extending the candidate's psychological knowledge and understanding, developing their ability to evaluate, analyse and set in a historical context, a wide variety of psychological evidence.

In addition, candidates prepare for further psychological study through the research and production of a psychological Research Investigation. The content covered in the Higher Course is specified in the relevant Arrangements Documents. The structure of the Higher Psychology Course is:

Mandatory Units

DF5K 12	Psychology: Understanding the Individual
DF5L 12	Psychology: Investigating Behaviour
DF5M 12	Psychology: The Individual in the Social Context

1.1 Course Assessment

In order to gain an award in the Higher Psychology Course, the candidate must pass the internal assessments associated with the component Units.

In addition, the candidate must meet the standards set by the external assessment. The external assessment will comprise of a Research Investigation and a Question Paper. The Question Paper which will be divided into three sections. The candidate must answer all questions in sections A and B and two questions from section C. Section A covers the *Understanding the Individual* Unit and is worth 40 marks. Section B covers the *Investigating Behaviour* Unit and section C covers *The Individual in the Social Context* Unit.

2 Research Investigation

Candidates undertaking a Psychology Course at Higher level must also undertake a Research Investigation. The Research Investigation should be based on a concept selected from the list of approved RI topics, as detailed in the document '*C212 12: Higher Psychology Research Investigation Brief*'. This document can be accessed on SQA's website: www.sqa.org.uk under the Psychology pages.

The Research Investigation will be externally marked and contributes towards the candidate's overall grade as follows:

Question Paper	100 Marks	= 80% of overall grading
Research Investigation	50 Marks*	= 20% of overall grading
Course total	125 Marks	= 100%

*The Research Investigation will be marked out of 50 but scaled to 25 before combining with the mark gained in the external exam.

2.1 Aim of the Research Investigation

The aim of the Research Investigation is to assess the candidate's practical skills in applying psychological methods and descriptive statistical techniques. It also provides a context for integration of knowledge across Units, including the ability to analyse and evaluate theory and/or evidence.

Psychology is not merely a knowledge based subject. It is recognised as a science and as such, candidates must not only be aware of scientific methods and skills, but must also be able to apply those skills in the pursuit of knowledge. Candidates will be made aware of the importance of planning, literature reviews, evidence, analysis and evaluation. They will also be introduced to the format and style of report writing in psychology.

These guidelines will assist the candidate in producing a piece of work that closely resembles the research procedures and report-writing conventions of the discipline of Psychology.

Candidates who are not being presented for the Higher Course award (ie. only attempting Units) are not required to undertake a Research Investigation. In this instance, all requirements for achievement are expressed within the Learning Outcomes of the Unit.

2.2 Nature and Assessment of the Research Investigation

The Research Investigation should be based on a topic selected by the teacher/lecturer and candidate from the list of approved topics. The Research Investigation report should be approximately 1500-2000 words long. Research Investigations may be conducted in small groups of no more than four persons, but the write up **must** be of an individual nature. Research Investigations need not be written under supervised conditions, however teachers/lecturers should be confident of the authenticity of each candidate's work. For example teachers/lecturers may supervise the writing of draft materials

prepared by candidates. It is important to note that on submission of the Research Investigation, both candidate and teacher/lecturer must sign a declaration stating that the work is that of the named candidate.

Due to the substantial nature of the Research Investigation, it is envisaged that candidates will need 25-30 hours for its preparation. Teachers/lecturers are likely to allocate around 6-8 hours teaching the skills and format for report writing and 8-10 hours monitoring the progress. Additional knowledge and skills will be taught within the *Investigating Behaviour* Unit.

Individual discretion will be required regarding the timing of introducing the Research Investigation to candidates. However, it is advised that such an introduction should be planned for before the Christmas break, or shortly thereafter, to allow time for each stage in the process. To this effect, part or all of this document can be copied and distributed to candidates. Once candidates have been introduced to the process required for such research, they can incorporate this knowledge with the content of the *Investigating Behaviour* Unit. This allows candidates to apply their learning to a practical situation. The concept, or topic around which the Research Investigation is based, should also be taught before candidates embark on the Research Investigation itself. Guidelines should also be given to candidates regarding the format and style used for psychology reports.

Published research studies which relate to the topics being taught in the Units *Understanding the Individual* and *The Individual in the Social Context* could be used to provide the foundation on which a practical Research Investigation could be introduced. This would facilitate understanding and would provide a frame of reference for the candidates who will then conduct a Research Investigation based on one of the approved topics provided by SQA. For practical purposes it is easier for the teacher/lecturer to have an entire class conducting the same study. This does not mean that all reports will be the same, as each candidate writes their own individual report. Although the whole class may be conducting the same study, it is recommended that candidates work and collect data in small groups of no more than four persons, to ensure that every individual is involved in collecting data, and to reduce the risk of plagiarism. Background reading for the Introduction and analysis of findings in the Discussion section will be different for each candidate. Although the whole class may have used the same methods, each candidate will write their own Method section and this too will therefore be expressed differently by each candidate.

Candidates will be provided with the Higher Psychology Research Investigation Briefs which outline approved studies indicating hypothesis, research method, specific ethical considerations and suggested presentational method. These should enable candidates to carry out a study according to standard procedures and to produce accurate results and reach balanced conclusions about the concepts taught.

Candidates should be familiar with some of the knowledge required to carry out a Research Investigation from the *Investigating Behaviour* Unit, eg hypotheses, sampling techniques, research design, data analysis and ethical issues in research. Candidates will also have knowledge of research studies from the Units *Understanding the Individual* and *The Individual in the Social Context*.

Although the design may be non-experimental (the options of non-experimental studies will be prescribed by SQA in the Investigation Brief for each session) and candidates may embark on their Research Investigation before completion of the *Investigating Behaviour* Unit, the following key features of research should be taught in preparation for the practical Research Investigation.

Descriptive Statistics:

- ◆ Measures of central tendency — mean, median, and mode
- ◆ Measures of dispersion — range
- ◆ Data analysis — tables, graphs, bar charts, histograms, pie charts or scattergrams

Guidance on Conducting Research:

- ◆ Ethical considerations
- ◆ Design procedures — Format and style of report writing
- ◆ Stages in the research process:
 - Establish research question and variables
 - Carry out background reading in the appropriate areas
 - Establish hypotheses
 - Design research
 - Plan a schedule
 - Collect data
 - Analyse data
 - Write draft
 - Write final version, following feedback from teacher/lecturer on the draft copy

3 Taught Elements

The Research Investigation allows the candidate to integrate elements, which are taught as part of the course. This includes:

- ◆ Knowledge and understanding, analysis and evaluation of the various methods and designs used when collecting data and conducting research
- ◆ Concepts and research issues relating to studies conducted in psychology
- ◆ Ethical issues which must be considered when conducting research with human participants
- ◆ Standard procedures for planning, conducting and reporting psychological research

The teaching of the required knowledge for the Research Investigation is primarily covered in the *Investigating Behaviour* Unit. However, it will be necessary to ensure that candidates are familiar with the appropriate report-writing style and format for the Research Investigation. They should also be aware of the appropriate descriptive statistics and methods used to present data. Examples of these may include:

Type of Data	Descriptive Statistics	Tables and Charts
Nominal	Percentages Mode	Frequency Table Pie Chart Bar Chart
Ordinal	Percentages Median	Frequency Table Frequency Polygon Scattergram
Interval and Ratio	Mean Median Mode Quartiles Range Variance Standard Deviation	Frequency Table Stem and Leaf Box and Whisker Histogram Scattergram

4 Ethical Guidelines

It is essential that all teachers/lecturers are familiar with the 'Ethical Principles for Conducting Research with Human Participants' (BPS 2000). **The BPS code applies to all psychological research.** A copy of these can be obtained from The British Psychological Society website: www.bps.org.uk.

4.1 Summary of BPS Principles for Conducting Research with Human Participants

Introduction

- ◆ Participants should have confidence in the investigators.
- ◆ There should be mutual respect between investigators and participants.
- ◆ BPS members should encourage colleagues to adopt these Ethical Principles and ensure that they are followed by those under their supervision, ie Higher and Advanced Higher Psychology candidates.

General

- ◆ Investigators should consider all ethical and psychological consequences of their research on their participants.
- ◆ There should be no threat to participant's psychological well-being, health, values or dignity. Where investigators are not familiar with participant's culture, ethnicity, age group, gender or social background it is suggested that the best judge of whether a Research Investigation may cause offence to the sample, are members of the population from which the sample is drawn.
- ◆ Psychologists owe a debt to those who agree to take part in research. Participants should be treated with the highest degree of consideration and respect. As such, the term 'participants' should be used rather than 'subjects'. This is seen to be a less derogatory and impersonal term.

Consent

- ◆ Where possible, participants should be informed of the nature of the Research Investigation prior to taking part, particularly if such information may influence their willingness to take part.
 - ◆ Where research is conducted using children, or with participants who are unable to give consent, special safeguards should be in place.*
 - ◆ Where participants are under 16, consent should be obtained from parents or those in loco parentis.*
 - ◆ If any negative consequences may arise from taking part in the Research Investigation then approval should be obtained from a disinterested advisor prior to conducting the research.
- * *Higher candidates should not use participants under the age of 16 in their research.*

Deception

- ◆ Withholding information about the nature of the research is unacceptable where such information may influence the decision of the participant to take part.
- ◆ Advice should be sought from disinterested experienced colleagues.
- ◆ Advice may also be sought regarding the consequences of the research on a minority group from members of the same minority group.
- ◆ If you feel that deception is necessary: **
— consider alternative procedures

- give sufficient information to participants as soon as possible
- consult an experienced researcher.
- ◆ Some research would not be possible, or would result in inaccurate results, if the full nature of the research were known to participants prior to their participation. However, a distinction is made between withholding information and deliberately giving false information. The BPS consider deception to have taken place if, on revelation of the nature of the hypothesis, participants feel any form of discomfort.
- ** *Higher Research Investigations should avoid deception,*

Debriefing

- ◆ Investigators should ensure that participants are given enough information on completion of the research to complete their understanding.
- ◆ Investigators should also discuss with the participants, their experience of the research.
- ◆ Debriefing does not justify unethical research.
- ◆ If information has been withheld prior to the study, then full and appropriate debriefing should be conducted. If a study induces a negative mood, then every step should be taken to raise the participant's mood before leaving the research setting.

Withdrawal

- ◆ Participants should be informed that they have the right to withdraw from the Research Investigation at any time.
- ◆ Withdrawal can take place before, during or after the Research Investigation is complete. Where this occurs afterwards, participant's data should be destroyed.

Confidentiality

- ◆ Participant information is confidential unless otherwise agreed in advance.
- ◆ Participants have the right to expect that any information about them is confidential and that they will not be identifiable from any written reports on the Research Investigation.

Protection

- ◆ It is the investigator's responsibility to ensure that participants are not subjected to any greater physical or mental harm than they would expect in their everyday life.
- ◆ Participants should be given a contact number (school/college) which can be used if they experience any stress following the Research Investigation, or if they have any further questions.
- ◆ Participants should be assured that they are not required to give any information that they consider to be private or personal.

Observation

- ◆ Where the observational method is used and consent is not obtained, such observation is only acceptable in circumstances where the participants would reasonably be expected to be observed by strangers.
- ◆ Cultural differences should be considered when applying the above rule.

Giving Advice

- ◆ Higher and Advanced Higher candidates should not offer advice as part of their Research Investigation.

Colleagues

- ◆ Investigators share responsibility for the ethical treatment of participants with their colleagues and candidates. A psychologist who believes that an investigator may be conducting unethical research should encourage them to re-evaluate their research.

4.2 Ethical Checklist

Clearly, it is important to ensure that the research you conduct is ethical. The table overleaf can be used to check what ethical issues you may need to consider before conducting your research.

Ethical Checklist

Question	Response Yes or No	Consequence
1. Are the participants likely to suffer any threats to their wellbeing, health, values or dignity?		If yes — consider altering the procedure. If no — go to question 2(a).
2(a) Are the participants from a different cultural or social background, or of different age or sex from the investigators?		If yes — go to question 2(b). If no — go to question 3.
2(b) Have members of the target population been asked if the procedure is likely to threaten participants' wellbeing?		If yes — go to question 3. If no — ask members of target population about any possible threat/intrusion. If there is no objection then proceed.
3. Have you informed potential participants of the aim of the study?		If yes — go to question 4. If no consider doing so. If this is impractical seek advice from an experienced researcher.
4. Are any of the participants unable (because of age or understanding) to give informed consent?		If no go to question 5. If yes — if participants are children (ie under 16), then they must not be involved in the Research Investigation. If they are not children then consider another target population.
5. Does the Research Investigation involve withholding information about what the participants will experience?		If no — go to question 6. If yes — add a stage to the procedures where this information is given. If this is not practical seek advice from an experienced researcher.
6(a) Does the Research Investigation involve giving misleading information about what the participants will experience?		If no — go to question 7. If yes — go to question 6(b).
6(b) Has the approval of an independent advisor been obtained?		If yes — go to question 7. If no — obtain approval from an independent advisor, or change your procedure to avoid deception.
7. Are the debriefing arrangements full and properly timed?		If yes — go to question 8. If no — add debriefing notes to the procedure.
8. Have participants been informed of their right to withdraw at any stage?		If yes — go to question 9. If no — add this information to the procedures before data is collected.
9. Do procedures ensure anonymity and confidentiality?		If yes — go to question 10. If no — review procedures to ensure this, or inform participants that anonymity and confidentiality are not ensured.
10. Have participants been asked about any medical conditions that may create a risk if they participate in the Research Investigation?		If yes — go to question 11. If no — where appropriate, add this to the procedures.
11. Does the procedure advise participants that they need not answer personal questions?		If yes — go to question 12. If no — add this to the procedures.
12. Does the Research Investigation involve any invasion of privacy?		If no — you are ready to collect data. If yes — revise the procedure or if this is impractical, seek approval from an experienced researcher.

5 Planning the Research Investigation

Early and effective planning will save time, reduce errors and maximise the potential for gaining a good mark in the Research Investigation. It is recommended that candidates use their Research Investigation topic for the completion of the Practical Portfolio element of the NAB assessment of the *Investigating Behaviour* Unit. This will provide the opportunity for teachers/lecturers to monitor candidates' understanding and progress of the Research Investigation.

6 Report Style

Good report writing should incorporate: Accuracy, Brevity and Clarity. Above all, the report should be readable.

Tense

Psychology reports are written mainly in the past tense. The previous research findings referred to have already been published, the procedures used already carried out and the results have been outlined. However, there are instances where the present tense is appropriate ie where a statement indicates continuing or general applicability of a concept, eg 'Jones established (*past tense, referring to a particular study*) that auditory stimuli are (*present tense, general finding*) more effective...'.

Person and Voice

Reports are generally written in the third person. For example, 'the researcher(s) found that...' as opposed to 'we found that...'. Exceptions to this rule would be found when discussing a particular problem found while conducting the research. The passive voice should be used, especially in the Methods and Results sections. For example, 'participants were asked to carry out the task' as opposed to 'I asked them to...'. 'A difference in scores was found' as opposed to 'we found a difference'. Objectivity can often be gained if candidates write as though someone else performed the research and they are merely reporting on what the other person did and found.

General Style

- ◆ Clumsy sentences can be improved by removing non-functional or redundant words.
- ◆ Avoid using the indefinite 'This' when starting sentences or paragraphs. Be more explicit.
- ◆ Avoid giving irrelevant descriptions, eg the fact that subjects may have been drawn from a number of different classes may be relevant **but** if it is not then the reader may wrongly assume that this was a variable which was of interest in the study.
- ◆ Candidates should check spelling, grammar and punctuation thoroughly. Sloppy usage may signal sloppy work.
- ◆ Write in plain English. Avoid using jargon and slang. Also, ensure that any theoretical terms are used in the correct context. Inappropriate usage may indicate a lack of understanding.

Specifics

- ◆ Typed/word-processed reports are to be encouraged and should be double-spaced. Hand writing should be in dark ink and should be legible.
- ◆ Use A4 paper, one side only and number pages, including Appendices.
- ◆ Do not put each separate page into a poly-pocket. A single staple is sufficient.
- ◆ Do not hand in ring-binders, spiral-bound booklets or slide-on (slide-off!) binders.
- ◆ Candidates should keep a copy of their report, on disk or photocopied, for security and for revision purposes.

NB

- ◆ When using an abbreviation for the first time, spell out its meaning.
- ◆ Axes on graphs should be correctly labelled as per the parameter. The x axis should represent the independent variable and the y axis should represent the dependent variable. Also include the unit of measurement. If abbreviations are used, explain them in the figure legend.
- ◆ Figures and tables should be accompanied by brief but explicit informative legends.

- ◆ Figures and tables should be integrated into the text not put in an appendix.
- ◆ Methods and Results sections should be presented in prose and not just consist of a list or a set of bullet points or tables and figures.
- ◆ Results can only be described as '**significant**' if inferential statistics have been carried out.

7 Report Format

A Research Investigation report should convey its message briefly and clearly. It should be possible to replicate the study after reading the report; all relevant information must therefore be given. The following notes are intended to help candidates to produce Research Investigations, which conform to the conventional format. The marks available for each section are given, below:

Section	Marks allocated
Abstract	5
Introduction	10
Method	8
Results	8
Discussion	12
References	3
Style and Presentation	4
Total	50

Organisation

The report must contain a Title, Contents page, Abstract, Introduction, Methods, Results, Discussion, Conclusion, References and Appendices. The Contents page should be clear and accurate allowing quick and easy direction to relevant sections. Appendices should be appropriate and their location indicated in the main body of the report.

Title (no marks allocated directly)

This should be short but specific. The subject matter of the report should be clear from the title. Avoid 'catchy' titles (eg 'To obey or not to obey'). The title page could also include the candidate's name and centre. Alternatively, this information could be presented on a separate sheet.

Abstract (5 marks)

The abstract is a short summary of the whole report (approx. 10%). The key points should be clear. It should include:

- ◆ a short statement of the issue being investigated (topic and previous research on the topic)
- ◆ the method(s) and design used
- ◆ brief outline of procedure
- ◆ who the subjects were, how many there were and how they were selected
- ◆ statement of IV and DV, or variables that were correlated
- ◆ summary of the experimental hypothesis
- ◆ summary of the main results (a sentence should suffice)
- ◆ name(s) of statistical test(s) used and significance level (if used)
- ◆ brief conclusion (again a sentence should suffice)

The abstract should be written after all the other sections have been written.

Introduction (10 marks) (Why you did it)

This section should give the background to **related** studies and theory. The introduction should progress from general background information towards the specific aims of the present Research Investigation. Use studies which relate to your IV/DV, eg if gender is your IV give evidence of studies whose IV was also gender. If you are modifying an existing study, give adequate details of the original study. The Introduction should state the questions being asked in the study and the reasons for asking them, ie the **aim** of the

study. The **experimental** and **null hypotheses** should be stated clearly, expressing the two variables under investigation and the nature of the predicted relationship, ie that one will affect the other, or that the two will be correlated.

Method (8 marks) (How you did it)

It should be possible for readers to replicate your Research Investigation simply by reading the Method section. It should be comprehensive yet concise. Do not include irrelevant details. Use the following sub-headings within the Method section:

Design: State the method of research undertaken (observation, experiment, survey, etc). State the design used (repeated measures, independent measures, etc). Give a brief sentence explaining why this design was used. Where an experiment was conducted, state how subjects were assigned to control/experimental groups (together with numbers in each). Describe fully the independent variable and its conditions, and the dependent variable. Where a correlational study was conducted, describe fully the two variables. The experimental/alternative and null hypotheses should be a reflection of this information. State the controls (eg standard instructions, environment, time of day, time given, details of how counterbalancing was implemented, etc).

Participants: Describe the relevant characteristics of the participants, eg how many were used. Describe the population from which the sample was selected, ie who were they? (usually friends, neighbours, etc) and the method of sampling used. Age and sex should also be stated.

Apparatus/Materials: Describe the apparatus. In the case of an observational study this may be as simple as pencil and observation schedule. If so, include a copy of the observation schedule used in the appendices. If a survey was conducted include a copy of the questionnaire. If an experiment (eg Stroop test) was conducted ensure that a copy of the test materials used by participants is also included. If specialist software was used, describe it; if special apparatus was used (eg for mirror drawing), provide a sketch. Don't forget to include a reference to standardised instructions here, and put actual instructions in the appendices.

Procedure: This should include a step-by-step summary of what the experimenter/researcher and participants were required to do, starting with the ethical procedure of giving participants information about the study, asking for consent and informing them regarding their right to withdraw. If observations were recorded, state whether time or event sampling was used. If questionnaires were used, did the researcher read questions and record answers or did participants complete them independently? Were participants treated individually or as a group? A summary of instructions given to participants should be given. (Instruction sheets can be referred to as appearing in the appendices). It should be made clear that on completion of the task, participants were thanked and debriefed, and asked for their comments. They could be given a contact number for any further queries (eg the school/college phone number — not the candidate's own number).

Results (8 marks) (What you found out)

This should start with a few sentences of text saying what was done with the data; it should be a summary of your data (raw data should be in the appendix). Use tables and graphs to represent data (see notes on 'Report Style' in Section 6). Use appropriate statistical techniques, eg mean, median, mode, range of standard deviation, correlation. Tables and graphs should be given titles. Rows, columns and axes must be labeled accurately (ie not just 'scores'). Tables and graphs should **never** stand alone. They should be accompanied by explanations in prose and the reader should be told where to look for the various results, and which statistical calculations were conducted. The

workings, which accompany statistical findings, should be included in the appendix. This section should end with a statement of the statistical result and whether or not it supports the research hypothesis. There is more to be lost than gained (in terms of marks) from calculating inferential statistics if calculation or interpretation is incorrect.

Discussion (12 marks) (What you think it means)

State the findings and interpret them. Say whether your hypothesis is supported. Make comparisons between your findings and those mentioned in your introduction (similarities/differences). State the implications of your research for broader theoretical issues (outlined in Introduction). Evaluate your research in the light of that of others. State the limitations of your study and give any modifications/improvements required, if it were replicated. Consider the specific weaknesses of your study: 'sample was small and unrepresentative' is true of virtually all candidate studies and will gain little credit. On the other hand, you will be credited for identifying a particular extraneous or confounding variable that should have been controlled, or ethical concerns over possible sources of anxiety for participants in the procedure. Suggestions for further research should be made, related to the current study, perhaps into a question arising from the findings.

References (3 marks)

Identify studies, books and journals used during your Research Investigation. Examples of Reference Format are:

Journals: Last name, initials, year of publication, title or article, *journal title*, volume pages.

For example:

Sturge, A. (1953). Operant conditioning and anxiety reduction in three species of insects. *Journal of the Experimental Control of Behaviour*, 4, 189-196.

Books: Last name, initials, year, *title*, place of publication, publisher.

For example:

Sweeney, A (1960). *Backwaters of Behavioural Research*. London: Maudley and Carter.

Research cited in a text book:

For example:

Wells, G.L. (1993). What do we know about eyewitness identification? *American Psychologist*, 48, 553-571. Cited in Gross, R. & McIlveen, R. (1998) *Psychology: A New Introduction*. London: Hodder & Stoughton.

To cite a piece of research, or an author, in the body of your report, give the name(s) and date of the research in brackets. Give page numbers for any direct quotes you may use. Ensure that **all** cited researchers/authors are listed in your references.

Appendices (no separate marks allocated as these will be credited in the Method and Results sections)

This is the place to include raw data, calculations, standard instructions, questionnaires, observation schedules etc. The acid test as to what goes in the body of the report and what goes in an Appendix is whether it is information the majority of readers will need to enable them to understand your Research Investigation. Diagrams, for example, are more useful close to the text they support, rather than buried in an appendix. Anything else, especially if it is lengthy or very detailed, should go in an appendix.

Style and Presentation (4 marks)

Marks will be awarded for a well-written Research Investigation, which follows the appropriate style and format of a psychology report. They should use appropriate technical language and reflect the scientific nature of the discipline.

8 Research Investigation Checklist

Once the data has been collected, the following checklist (overleaf) can be used by the candidate when producing the draft Research Investigation and by the teacher/lecturer when giving feedback on the Research Investigation.

Higher Psychology — Research Investigation Checklist

Candidate: _____

Class: _____

*NB Total word count should be 1500–2000, excluding tables, graphs, appendices.
Section word counts given below should be treated as a very rough guide.*

Section	Complete?	Description
Title		Clear/precise/not too long
Abstract <i>Approx 150 words</i>		Brief outline of essential features of study: background, aims, sample, method and design, procedure, measures, findings/conclusions.
Introduction <i>Approx 500–650 words</i>		Relevant area of Psychology; Area of psychology in which concept comes from; Concepts and theory/theories involved Previous research study/studies Link to current study Aims and hypotheses of this study.
Method <i>Approx 350–400 words</i>		Design: Experimental/non-experimental; method(s); design (indep meas/rep meas/matched pairs/correlation)+ justification; IV (+conditions) and DV, or other variables being tested; controlled variables. Participants: Number, ages, sex, who they were, naïve?, sampling technique. Materials/Apparatus: Description of all materials used, including standardised instructions. Questionnaires, rating scales etc, need full description and examples of items and responses; scoring method; explanation of what scores mean. (Put actual materials in appendices) Procedure: Step-by-step account of how data was collected from participants. Style is impersonal and past tense. Start with brief to participant, giving info/getting consent; assurance of confidentiality, right to withdraw; can be offered access to results etc (ie ethics). Then standard instructions and actual research procedure. Finally, debrief (thanks, any comments etc). <i>Check: have you given enough detail to allow replication?</i>
Results <i>Approx 100–150 words</i>		Start with text: describe in a few sentences what has been done with data. Summary table of data (ie means, ranges, standard deviations; or full table, if correlation). Graph(s). Rows/columns/tables labelled and title for each graph/table. Do the results appear to support the hypothesis? <i>Put raw data and calculations in appendices.</i>
Discussion <i>Approx 500 – 650 words</i>		Was the null hypothesis supported? Describe results and explain what they mean in ordinary language. Explain whether results support the main theories, concepts, research findings described in Intro. If result was unexpected, suggest reasons why. What problems occurred with the method/design/sample/control/procedure? Was the research ethical? How could these be remedied? Suggestions for future research? Conclude with a brief statement of the statistical findings, in relation to the hypothesis (two or three sentences).
References		<i>See examples in Section 7: Report Format</i>
Appendices		All materials, standard instructions, questionnaires, observation schedule etc; raw data, calculations.
General		Good quality presentation, including contents page, page numbers and divided into appropriate sections with headings and using appropriate technical language.. Tables/graphs numbered, titled, referred to in text. Accurate referencing, eg Harvard.

9 Things To Consider Before Submitting The Research Investigation

- ◆ Produce a draft **on time** — this will allow your teacher/lecturer to give you feedback.
- ◆ Get someone to proof read the draft before you submit it.
- ◆ Although the same results may be used by the group, all written work must be the candidate's own work.
- ◆ Show workings for descriptive statistics and inferential statistics if carried out (nb. inferential statistics are not necessary).
- ◆ Use report style and format notes to ensure that you include everything, using the correct headings
- ◆ Consider ethics, and address them in the report.
- ◆ Keep a copy of your report.

10 Special Needs

The Research Investigation is intended to ensure that there are no artificial barriers to learning or assessment. Special needs of individual candidates should be taken into account when planning learning experiences and selecting assessment instruments. For information on these please refer to SQA document *Guidance on Assessment Arrangements for Candidates with Disabilities and/or Additional Support Needs* (BA2399, September 2004).

APPENDIX 1: ATP Guidelines for Students

ATP Guide to Ethics for Teachers and Students of Psychology at pre-degree level. (2003)

The following document is intended for the use of teachers and students of psychology in the UK, including GCSE and Int. 2 Levels, 'A' Level, Higher and Advanced Higher Level. (This document can be copied separately and used as a class handout.)

The purpose of coursework is to give you an opportunity to gain first hand experience at designing research and gathering data, whilst at the same time ensuring that you do not do anything that may bring psychology into disrepute. Practical coursework allows you to develop the use of skills and gain a better understanding of concepts that you will learn about during your course, and apply this knowledge to your Research Investigation. Therefore the designs for coursework may be either replications or variations of past studies rather than new research. The British Psychological Society (BPS) have issued ethical guidelines for psychological research but these guidelines are intended to cover all levels of psychological research from undergraduate to doctorate. Although they are readily available from the BPS they can be reduced to the following six areas which are more appropriate to pre-degree coursework:

- ◆ Consent and Deception
- ◆ Debriefing
- ◆ Withdrawal
- ◆ Confidentiality
- ◆ Protection of Participants
- ◆ Observations

The reason that these areas have to be addressed thoroughly is due to the fact that your teachers/lecturers are responsible not only for the people who become participants in your Research Investigation, but also because they have a moral and legal obligation to protect you from harm. Statistics have also indicated that by the time a child reaches 16 it will have been tested on numerous occasions, and we do not want to add to that burden.

Consent And Deception

You must obtain the **consent** of participants to take part in your research and this should preferably be **informed consent** which means that you must explain, as fully as possible, the purpose and design of your research.

It is essential that you get this consent, even if you think that the participants will be less likely to take part. There is always a concern that the participants will guess the nature of your research and this will affect their responses. However, your research is unlikely to be ground-breaking in terms of findings, and should therefore be carried out as 'correctly' as possible. If it is necessary to **deceive** the participants, you must talk to your teacher/lecturer to ensure that he/she is happy with what you are doing. The most important consideration is to ensure that the **deception** will not harm the participants in any way and will not result in you

being criticised or abused as a result of your research. In order to overcome many of the potential problems you should undertake research which does not involve deception.

The ethical guidelines state that should the research involve children who are too young to give consent, the child's caregiver or person responsible for that child must give that consent. Most exam boards actively discourage using children as participants. There are a number of reasons for this which link into the fact that researchers are not always as considerate to the feelings of little children as perhaps they should be. Often this lack of consideration is due to lack of insight, rather than outright disregard for the feelings of the child-participants. If you think about it — giving small children competitive tasks could cause them to feel uncomfortable. How can they refuse to take part? How can they ask to have the research explained to them?

Similarly, you should be aware that children are not the only potentially vulnerable group. The elderly have been used in the past as research participants even though they later claimed they only agreed to participate as they felt intimidated by the researchers. You must really think about the feelings of potential participants and ensure that you do not exert undue pressure to make them take part.

One possible way you can deal with this issue is to give your participants a note regarding the research. This note could have a tear off consent slip which participants would need to sign confirming that they have agreed to take part and have been told that they can withdraw at any time. This would not be appropriate for all research, but would be an example of good practice and would absolve you of any potential problems at a later stage.

Debriefing

At the end of the research process, you should **debrief** the participants by explaining to them about the nature of the research. You should also talk about the procedure, and answer any further questions, your intention being to make sure that the **participants leave the research situation, as far as possible, in the state in which they entered**. Participants who feel unhappy about the situation after they have been debriefed can have their data withdrawn and destroyed in their presence.

Withdrawal

You must also tell your participants that they have a right to **withdraw**, without penalty, at any stage of the research. There are occasions when participants feel very uncomfortable and threatened by the situation but will feel unable to tell you. For example, a group of English candidates at a sixth form college were asked to take part in a memory test. The teacher/lecturer of the class readily agreed. One of the participants was feeling particularly vulnerable that day as a result of factors external to the college and really felt uncomfortable taking part. The participants were not told that they had the right to withdraw and so all dutifully completed the test.

When the vulnerable participant complained to their parent, the parent then complained to the college which resulted in an unpleasant situation occurring both for the teacher/lecturer and the candidate who had not given the participant the right to withdraw. Bearing this in mind, it is not really acceptable to involve candidates in research during lesson time.

Confidentiality

Any information provided by participants must be treated **confidentially** and you must ensure that their identities will not be revealed unless they have given prior informed consent. Although this right is enshrined in the Data Protection Act, it is essential that you respect this right. Imagine a situation where results of memory tests, or information provided in questionnaires is made public, even amongst your friends. If this information gets back to the participant, it could not only be damaging to their self-esteem, but will also make it extremely unlikely that others will agree to be participants in the future.

Although we often deny it, we are all interested in details of the lives of others. Consequently if we learn interesting or unusual information about other people, it is very tempting to share that information with others. If the research is of a slightly sensitive nature, this temptation will be greater. Therefore, in order to prevent information falling into the wrong hands, you should avoid topics that involve sensitive issues. In fact at this level, there is no need to have any information which might result in the ability to identify participants in research and therefore result in an inadvertent breach of confidentiality. Numbers or nom de plume etc can be used and any material collected, eg questionnaires can be placed by the participant into a large envelope.

Protection Of Participants

All participants must be protected from mental or physical harm during the Research Investigation so they must not be put in a situation of greater **risk** than they would encounter in their everyday life. However, you must discuss your proposed research with your teacher/lecturer in order that they can identify any potential risks involved in your designs.

Avoid socially sensitive research which involves investigation of topics such as sexuality or health (eg eating disorders). Remember that you may not necessarily be aware what are sensitive issues for an individual. There is a danger of you inadvertently opening up 'a can of worms' which you are not qualified to deal with.

Participants sometimes believe that simply by studying psychology, that gives you the knowledge and skill to offer advice. How many times are we asked by the public whether we can tell what they are thinking once they know we are involved in the subject of psychology? Therefore any research from the most basic topic to the potentially more sensitive could result in participants offloading their personal problems at the drop of a hat. If this does occur, you should be sensitive in telling them that you are not qualified to deal with such issues, and your research does not require participants to disclose such personal information.

Research which involves children should not require them to do anything that may cause them any sort of distress. Therefore, unless you are undertaking research which involves observation in a place where you and your participants would normally be, it is probably best to avoid it or seek further guidance.

If the procedure involves using some kind of physical monitor such as those which measure heart rate or blood pressure, you have to consider what subsequent actions you should take if the results highlight some kind of abnormality. If you are concerned about any of your participants, share that information with your teacher/lecturer. There are also issues that many of the cheaper machines are not very accurate. In some respects, use of such equipment is possibly best avoided.

You must also take into account you may well be taking up the time and using information provided by people who have nothing to gain from the process. Although your coursework can take you a long time, most of it can only be completed as a result of the efforts and time given by people who have nothing to gain from the process. Therefore when designing research, you must consider the cost in time and effort of your participants and not ask them to complete long-winded and meaningless tasks but should aim to make the participation time limited.

NOTE: Be aware that some situations where data collection may be possible may result in you unwittingly putting yourself in danger. Avoid Research Investigations into the effects of any type of drug (even alcohol) as this may result in some kind of mishap and you would be held partially responsible and would have to abandon your investigation.

Observations

If the research involves observation and the participants have not given their informed consent, the **observations** should only take place in situations where people would normally expect to be in public view.

However, if the research involves a set up where you are observing in a position which may put you in danger, this research is unacceptable. For example, observations late at night, in pubs or clubs, on busy road junctions, or on zebra crossings (to observe the gender of the driver who stops) may all put you in situations of danger. You may also distract passers-by who may be negotiating traffic in areas where they need to be fully alert.

FINALLY: Be sensible, think about all aspects of your research and when in doubt, discuss the design with your teacher/lecturer.

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