

# STUDENT GUIDE

With  
exam-style  
questions  
and model  
answers

PEARSON EDEXCEL A-LEVEL

# Practical Biology A

(Salters–Nuffield)

Dan Foulder

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## Section C Issues and debates

You need to review 11 issues and debates. You will need to discuss the issues and debates in relation to material in Papers 1, 2 and 3. The 11 'issues and debates' are shown in Tables 14–24 with some suggestions about suitable material you could use relating to each of them. They are then linked to clinical psychology before they are outlined briefly to help your revision. Note, the specification also provides links to issues and debates in each topic area.

### The 11 issues and debates

A brief explanation of the 11 'issues and debates' follows, including several links to the four topics in Year 1 and clinical psychology, so that you have some examples to use.

#### Ethical issues in research (animals and humans)

You will have revised ethical issues in research relating to both the use of animals and of humans. With regard to the use of animals, you can use the Animals (Scientific Procedures) Act 1986 (see page 30). Regarding the use of humans you can use the BPS Code of Ethics and Conduct (2009) (see page 30) and issues around the management of risk. You can also draw on what you learned about HCPC guidelines for clinical psychology too. If you have covered child psychology, you can bring in issues around a child's rights.

**Table 14** Relating Year 1 topics and clinical psychology to 'ethics' as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Ethical issues in research (animals and humans)	Social: the BPS Code of Ethics and Conduct (2009) Cognitive: case studies such as HM raise ethical issues Biological: aggression links with brain damage Learning: the Animals (Scientific Procedures) Act 1986
Clinical psychology	HCPC guidelines for practitioners relate to ethics, such as the requirement to practise safely and effectively, and work within professional legal and ethical standards.

#### Exam tip

When discussing ethics and animals in studies avoid any mention of human guidelines, such as giving the right to withdraw, and focus on the ethics of using animals in studies, such as avoiding endangered species and caring for the animals in a suitable way.

#### Practical issues in the design and implementation of research

Throughout your course you have been studying method issues. You have also carried out a number of practical investigations. You will have been considering practical issues in the design and implementation of research. For example, issues include problems with order effects if a repeated measures design is used, but you will have learnt how to overcome these effects, such as using counterbalancing as a practical solution. Practical issues can include how to operationalise variables to get a measurable DV, such as how to measure driving behaviour perhaps.

#### Exam tip

Be ready to discuss each of the issues and debates using examples from your course. Section C of psychological skills (Paper 3) includes a 20-mark essay/piece of extended writing, so be prepared to respond to an issues and debates question of that length and style. You could generate a practise essay title such as 'Assess how far there are [...] in psychological research', substituting the different issues and debates.

#### Knowledge check 29

Explain one ethical issue regarding one study using human participants that you have covered.

#### Knowledge check 30

Explain the ethical issues regarding one study using animals that you have covered.

**Research methods**  
Mock Paper 3 (b), Q1f  
(see page 66)

**Review of studies** Mock  
Paper 3 (b), Q3a (see  
page 69)

**Table 15** Relating Year 1 topics and clinical psychology to ‘practical issues in the design and implementation of research’ as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Practical issues in the design and implementation of research	Social: choosing samples (Sherif et al. (1954/1961)) Cognitive: memory experiments lead to lack of validity Biological: twins — allocation to MZ/DZ (see page 18) Learning: observations when situations rarely occur
Clinical psychology	Randomised controlled trials (see page 16) are often used as they allow comparison of someone receiving treatment with someone not receiving treatment. To overcome an ethical issue waiting list controls are used, which means all participants will receive the treatment in the end (e.g. Williams et al. (2013)).

## Reductionism in the explanation of behaviour

You covered the idea of reductionism when you learned about psychology as science in the learning theories part of your course in Year 1. Review your material on reductionism so that you can discuss it as an issue and debate. Reductionism refers to reducing something to measurable, manageable parts so that it can be studied. The issue is that by doing so the ‘whole’ is lost and not studied. Studying the ‘whole’ is known as the **holistic approach**. One strength of using a **reductionist approach** is that there can be controlled study of those manageable parts and the understanding gained can be useful. For example, understanding brain functioning relating to aggression, as Raine et al. (1997) did, can be valuable.

**Holistic approach** The idea that to find out about something, the whole must be studied, not the parts. For example, you can study a person’s levels of aggression by scanning and seeing activity in the limbic system (reductionist approach), but real-life aggression is more complex: it has a trigger, a type (e.g. physical or verbal) and a background.

**Reductionist approach** The way science looks at parts of a whole in order to use controls and study something systematically. This focus can mean reducing behaviour to something not ‘real’ and not ‘whole’. Science needs to draw cause-and-effect conclusions and must often reduce what is to be studied to something manageable.

**Table 16** Relating Year 1 topics and clinical psychology to ‘reductionism’ as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Reductionism	Social: questionnaire items can make attitudes measurable Cognitive: the memory models reduce memory to parts Biological: aggression is more than brain structuring Learning: animal studies reduce brain functioning
Clinical psychology	Glombik et al. (2017) found that antidepressants affect neurotransmitter and brain functioning while studying the effectiveness of drug therapy without looking at other issues affecting such functioning, such as life events.

## Comparisons of ways of explaining behaviour using different themes

Different themes are used in psychology to explain behaviour. There are main perspectives such as behaviourism and Freud’s psychodynamic approach, which can be seen as themes. There are themes within such perspectives/approaches too, such as group decision-making in social psychology, and culture and gender

### Exam tip

To prepare an answer about practical issues when doing research make a list of possible issues, including the two ideas suggested in this section.

### Knowledge check 31

Why do you think Rosenhan (1973) had his participants give information truthfully, except for the ‘thud’ and ‘hollow’ sounds they had to say they heard?

### Knowledge check 32

Is a piece of research gathering qualitative data more likely to be taking a holistic or a reductionist approach?

### Exam tip

It can be said that reductionist research is limited because it misses the whole picture, but you can use the point as a strength of research because by being reductionist and focusing on a specific part of a behaviour, for example, controls are more possible, giving cause-and-effect results.

Issues and debates  
Mock Paper 3 (a), Q6  
(see page 59)

in psychological research, relating to explaining behaviour. You need to be able to compare such themes in relation to how they explain behaviour.

**Table 17** Relating Year 1 topics and clinical psychology to ‘comparisons of ways of explaining behaviour using different themes’ as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Comparisons of ways of explaining behaviour using different themes	Social: SIT and realistic conflict theory use different themes Cognitive: models of memory use different themes Biological: psychodynamic/biology and aggression Learning: three learning theories
Clinical psychology	For both schizophrenia and depression a biological and a non-biological explanation have been covered, using different themes to explain each mental disorder.

### Exam tip

Check on the approaches/perspectives (e.g. social and cognitive psychology) so that you can use them as themes. Within each of the larger perspectives/approaches see what themes you can find. Then compare them, perhaps in relation to specific behaviour, such as aggression or behaviour related to a mental disorder.

## Psychology as a science

You covered the idea of psychology as science in the learning theories part of your course in Year 1. You looked at issues of reductionism, replicability, reliability, validity (internal, predictive and ecological validity), falsification, empiricism, hypothesis testing and the use of controls. Some of these features of science and of psychology being less scientific have been covered in Section A of this guide: replicability, reliability, the three types of validity, hypothesis testing and the use of controls. Reductionism is an issue and debate on its own, as you have seen. The other features of psychology as science — falsification and empiricism — are explained briefly here.

### Exam tip

The status of psychology as science is an important issue because science tends to be accepted as the way in which we know about our world and psychology is the way in which we know about the mind and behaviour. You might be asked about how far a piece of psychological research is scientific.

**Falsification** is a feature of science. The idea (from Karl Popper) is that researchers should aim to falsify a hypothesis rather than to find evidence for the hypothesis. The point is that we cannot ‘prove’ anything to be ‘true’; we can only show with certainty that something is false. We can keep testing a hypothesis such as ‘all females are better drivers than males’ and find lots of times that this is the case (this is just an example of course), but that would not prove the statement true. As soon as we find one male driver better than the female score we have proved the statement false. This is what science is about — trying to prove statements false. In practice, psychology tends to add up the evidence ‘for’ a hypothesis rather than ‘proving’ it false.

**Empiricism** is the idea that knowledge comes only from sense data. Empirical data are data collected by sight, sound, taste, smell and touch — through our senses. Science uses empirical data to test hypotheses that are derived from theories.

Review of studies Mock Paper 3 (a), Q4 (see page 53)

Review of studies Mock Paper 3 (b), Q3b (see page 70)

### Knowledge check 33

Aggression can be studied using different themes/approaches. Give three different themes you encountered in your study of aggression in your course.

**Falsification** Looking at a claim (hypothesis) to see if it can be shown not to be the case. For example, we can find helpful females many times but we cannot say all females are helpful. When we find one unhelpful female we can show the opposite is the case (not all females are helpful) — we can falsify but not prove.



The cycle of ‘doing science’ is as follows: a hypothesis is generated from a **theory**; empirical data are collected (using our senses, from reality); if the hypothesis seems to be supported, the theory is said to be supported. This process is known as **science building**.

**Table 18** Relating Year 1 topics and clinical psychology to ‘psychology as a science’ as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Psychology as a science	Social: Milgram uses laboratory experiment procedures Cognitive: uses experiments and controls Biological: synaptic transmission is biology Learning: uses many experiments with controls
Clinical psychology	The use of randomised controlled trials (see page 16), where a control group not receiving treatment is compared with a treatment group, shows how something is isolated for study and cause-and-effect conclusions can be drawn — at least to an extent. For example, Laws et al. (2018) looked at studies using RCTs and found little evidence of the effectiveness of CBT for those with schizophrenia. Their use of RCTs gave weight to their conclusions. Biological explanations for mental disorders draw on scientific explanations (e.g. genes) and scientific methods like scanning.

### Exam tip

Research methods that use case studies or get data from children by listening and engaging with them have value but can be called ‘unscientific’. Such research in psychology still focuses on avoiding bias, including subjectivity on the part of the researcher. There is an element of science involved.

## Culture and gender issues in psychological research

You have looked at **culture** to see if it affects obedience and seen that obedience seems to be more of a response to the situation than emanating from someone’s cultural background.

**Gender** also featured in studies of obedience although studies tend to show that obedience is generated by the situation rather than by gender. However, it did seem that gender affected the participants’ emotional responses in Milgram’s studies. Females seemed more distressed by having to obey against their moral code. Gather more information from your course about gender and culture issues so that you are ready to answer a question on either issue.

**Table 19** Relating Year 1 topics and clinical psychology to ‘culture and gender’ as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Culture and gender issues in research	Social: obedience and prejudice link to gender and culture Cognitive: Spanish and English speakers and digit span Biological: the twin study found no gender differences Learning: gender and culture learned from observation
Clinical psychology	Studies mention culture differences, such as in the diagnosis of schizophrenia. For example, Selten et al. (2016) suggest a link between minority ethnic groups and the diagnosis of schizophrenia.

**Theory** An idea about why an event happens, usually based on previous theories and research.

**Science building** A body of knowledge on which others can rely. This involves objectivity, measurable concepts (so that the tests can be repeated), careful controls and the generating of hypotheses from previous theory (so that one piece of evidence can link to another in order to build the knowledge).

### Knowledge check 34

Why are empirical data gathered to test a hypothesis (which has been derived from theory)? Give an example of empirical data that were gathered from Pavlov’s (1927) work.

**Culture** In psychology, a variable that can be considered, such as whether multicultural societies have different prejudices than those using an assimilation approach or whether culture affects levels of obedience.

**Gender** In psychology, a variable that can be considered in studies, such as whether there are gender differences in obedience.

## The role of both nature and nurture in psychology

You covered twin studies in biological psychology. They also feature in the review of research methods in Section A of this book (see page 18). Twin studies relate to the study of the effects of nature and of the environment on our behaviour and characteristics. They help to show which behaviours are generated by genes and which are generated by a shared environment (twins share their environment) or a non-shared environment (twins have some environments they do not share, such as having different friends).

Cross-cultural studies can help to show what in humans derives from nature and genes and what derives from nurture (the '**nature–nurture debate**'). For example, if a procedure is repeated in different cultures and the same results are found, this suggests that what is being measured by the procedure is part of human nature. It has been said that attachment is one such characteristic. A characteristic found in all cultures (where it has been studied) and thought to be down to our nature is called a '**universal**' characteristic.

**Table 20** Relating Year 1 topics and clinical psychology to 'nature–nurture' as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
The role of nature–nurture in psychology	Social: prejudice can be from culture (nurture) personality (nature) Cognitive: memory — nurture (schemas) and nature (brain) Biological: nature and the nature–nurture debate Learning: measurable and observable studies (nurture)
Clinical psychology	Nature–nurture as a debate relates to genetic and environmental explanations and to the tension often found between the two. As social relationships relate to environment/nurture and biological explanations relate to nature, both schizophrenia and depression show issues of nature–nurture in their explanations.

### Exam tip

As for all issues and debates in your course, be sure to have examples to use to show your understanding and to offer evaluation points. For this particular issue, you can use Brendgen et al. (2005) as an example of a twin study (a contemporary study from biological psychology).

### Exam tip

You can offer evaluation of research to discuss the nature–nurture debate. For example, twin studies do not show 100% similarity in MZ twins, which suggests there is no characteristic that is purely 'nature'.

### Exam tip

Prepare answers on both culture and gender as variables in research in psychology so that you have some ideas ready, which should help with your timing in an exam.

### Knowledge check 35

Give one study that you have covered, apart from Milgram's studies, which considers gender differences in its results.

### Nature–nurture

**debate** The question of how far a characteristic is derived from our nature (what we are born with, which is down to our genes) and how far it derives from our nurture (what we experience from our environment as we develop, which is down to our upbringing).

### Universals/ universality

Characteristics that are found in all cultures and therefore thought to be down to human nature and not to nurture.

## The development of psychology over time

Psychology has developed over time since Wundt opened the first laboratory in 1879. You need to be able to assess and evaluate the development of psychological understanding over time. You can do that by considering research in one area of study. If you looked at Burger (2009) as a contemporary study in social psychology you will know, for example, that Burger's replication of Milgram's work supported Milgram's claim that obedience is down to the situation. In this example, psychological

Review of studies Mock Paper 3 (a), Q3b (see page 52)

Issues and debates Mock Paper 3 (b), Q6 (see page 77)

understanding over time developed to the extent of saying that Milgram's findings still stood. Another example might be the multi-store model of memory, which Baddeley took further when he developed the working memory model. These examples show how to build up enough material for this issue and debate.

**Table 21** Relating Year 1 topics and clinical psychology to 'the development of psychology over time' as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
The development of psychology over time	Social: Burger (2009) replicated Milgram's (1960s) work Cognitive: working memory extends into the twenty-first century Biology: CAT to PET to MRI to fMRI Learning: exposure therapies and their development
Clinical psychology	The way the <i>Diagnostic and Statistical Manual (DSM)</i> has changed over time reflects how psychological understanding has changed over time, such as some disorders no longer being included and others, like internet addiction, being added. The way typical antipsychotic drugs have given way to atypical ones again shows understanding developing over time.

## The use of psychology in social control

Psychology has uses in society, as you found out when looking at key questions for society that can be informed by psychology. Psychology can also be used in **social control**.

Social control refers to systems regulating people, including their thoughts, feelings and behaviours, in a society. You have studied a lot of theories in psychology in your course and you will have seen that understanding in psychology can be used as a means of social control. Therapies and treatments are one example. For example, drug therapy controls individuals, such as limiting withdrawal symptoms and encouraging cessation of drug taking. When you studied learning theories you looked at treatments for phobias too, such as systematic desensitisation, which could be seen as controlling people (e.g. overcoming their fear of flying). It is assumed that individuals wish to undertake such therapies, in which case they are perhaps in control rather than society, but you can see that there might be a case for saying that therapies and treatments are used as social control. This is the sort of discussion involved in this issue and debate.

**Table 22** Relating Year 1 topics and clinical psychology to 'issues of social control' as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Issues of social control	Social: uniforms bring obedience Cognitive: leading questions in court Biological: aggression down to brain structure Learning: classical conditioning in advertising
Clinical psychology	Drug therapy can be seen as a chemical straitjacket, meaning it is prescribed as a form of control. The <i>DSM</i> 'medicalises' people, seeing them as patients and prescribing treatment. However, Laing suggests schizophrenia is another way of living rather than a medical illness. See also Rubin's (2018) proposal about using the <i>Classification and Statistical Manual of Mental Health Concerns (CSM)</i> rather than the <i>DSM</i> or the <i>International Classification of Diseases (ICD)</i> classification systems. Treating mental illness does not have to be about social control.

### Knowledge check 36

If a characteristic is found in all cultures where it has been studied, this suggests it is a universal characteristic in humans (found in all humans) coming from human nature. What is another explanation for such a finding?

### Knowledge check 37

Give an example from learning theories or biological psychology in your course where you can say that psychological understanding has developed over time.

### Exam tip

When considering how psychological understanding has developed over time you could write a bit about research methods. For example, access to and techniques about scanning have enabled more information (e.g. about the function of brain regions) to be uncovered, which has helped to build psychological understanding.

### Knowledge check 38

Give one example from your course where you saw psychology being used as a form of social control outside of therapies.

**Exam tip**

You could use the key questions you have studied to see if they relate to social control. For example, controlling riots or reducing prejudice might be seen as society wishing to have control, and helping people with dementia might be about reducing the cost of care (however cynical that sounds).

## The use of psychological understanding within society

For each of the topic areas in your course you covered at least one key question for society. When you used concepts, theories and/or research from a topic area to explain a key question for society you discussed the use of psychological knowledge in society. You can use your key questions to discuss this issue and debate and bring in other material such as treatments and therapies, which use psychological knowledge in society.

**Table 23** Relating Year 1 topics and clinical psychology to ‘the use of psychological understanding within society’ as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
The use of psychological understanding within society	Social: social identity relates to mental health Cognitive: memory understanding helps with dementia Biological: drug therapies such as substitute drugs Learning: instigating the 9 p.m. watershed (social learning theory)
Clinical psychology	Treatments for schizophrenia and depression show the use of psychological knowledge within society, CBT being an example. For example, Twomey et al. (2017) used a meta-analysis and found evidence for the effectiveness of a computerised CBT programme called Deprexis, which is used for depression.

**Knowledge check 39**

Explain one way in which psychological knowledge in clinical psychology has been useful in society.

**Exam tip**

You can use similar material for different questions (e.g. psychology used as social control is psychology used in society). Shape your answer to focus on the question — for example, if the question is about using psychology in society, you can look at how psychology can help to understand schizophrenia (not as control).

## Issues related to socially sensitive research

The final issue and debate is an important one. You will have seen in your course how psychology often looks at issues that are sensitive in society. Socially sensitive research looks at issues (including arising from study results) that affect people and/or society in a negative way and/or that raise moral and ethical questions. Such issues can change over time. Currently, socially sensitive research might be research looking at religious beliefs or, as has been the case for some time, research looking at racial aspects of people's behaviour. A research question can relate to something socially sensitive, the methodology can lead to social sensitivity (such as issues around confidentiality), there can be issues with funding (such as how funders might affect published findings), and how findings are used in a society can be a socially sensitive area.



Table 24 Relating Year 1 topics and clinical psychology to 'issues related to socially sensitive research' as an issue and debate

Issue and debate	Examples from the four Year 1 topics and clinical psychology
Issues related to socially sensitive research	Social: prejudice relates to political structure Cognitive: memory loss, such as from dementia Biological: Raine et al.'s research is socially sensitive Learning: therapists have power over a client
Clinical psychology	Randomised controlled trials using waiting list controls respond to issues about socially sensitive research by ensuring that any treatment is offered to the control group as well as the treatment group. If research gave treatment to one group and not to another, that could be seen as a socially sensitive issue, especially if the treatment is related to mental ill health, which is a sensitive issue in society. In another example, Goya Arce and Polo (2017) looked at perfectionism self-presentation and depression in adolescents, which can also be seen as socially sensitive research, such as ensuring negative self-esteem is not engendered.

### Exam tip

As with other issues and debates, when you are making notes be sure to include examples from your course. You could use your textbook and go through the classic and contemporary studies as well as looking at the key questions you studied, as you can use these as evidence.

Review of studies Mock Paper 3 (b), Q4 (see page 70)

### Knowledge check 40

Explain one area of psychology that you have studied where research into the area is seen as 'socially sensitive'.

### Summary: issues and debates

There are 11 issues and debates to cover in relation to your course. These are:

- ethical issues in research, including both research with animals and humans
- practical issues in the design and implementation of research
- reductionism in the explanation of behaviour
- comparisons of ways of explaining behaviour using different themes
- psychology as a science
- cultural and gender issues in psychological research
- the role of both nature and nurture in psychology
- the development of psychology over time
- the use of psychology in social control
- the use of psychological understanding within society
- issues related to socially sensitive research

# Questions & Answers

This section includes two sets of ‘mock’ Paper 3 exam style questions — (a) and (b) — to help you to prepare. You can find actual exam papers using the Pearson Edexcel website (<https://qualifications.pearson.com>).

## Examination issues

### Assessment objectives

You are marked according to assessment objectives (AOs). You can find these in the specification. In brief: **AO1** is knowledge and understanding, **AO2** is applying knowledge and understanding, **AO3** is analysing, interpreting and evaluating.

In Paper 3 there is a strong weighting on AO3 with about 50% of the marks on AO3 and 25% on the other two assessment objectives. This is worth noting. It means you will need to analyse, interpret and evaluate a lot more than you need to describe and apply your knowledge and understanding. In questions, look for where AO3 is required.

### Command words

The specification includes Appendix 6, which explains command words that can appear in your exam papers and what they require. This Questions & Answers section uses some of the command words and explains them, as do the Questions & Answers sections in Student Guides 1 and 2.

### Exam questions and marking

Your exams will have some points-based marking and some levels-based marking, for a total of 80 marks. There are three sections in Paper 3: Research methods, Review of studies and Issues and debates.

Research methods questions are worth a total of 24 marks and are points-based and largely short-answer questions, possibly including some 6-mark answers too. The Review of studies section is also worth 24 marks with 8 marks being points-based (can also include a 6-mark question) and 16 marks being levels-based. The Issues and debates section involves levels-based marking, one question having 12 marks and the other 20 marks (32 in total).

### *Extended open-response questions: allocation of AOs*

The various mark allocations for extended open-response questions have different assessment objective splits. Extended open-response questions are from 12 marks onwards for Paper 3:

- 12 marks can be split into: AO1 4 marks, AO2\* 4 marks, and AO3 4 marks; or AO1 6 marks and AO3 6 marks
- 16 marks can be split into: AO1 6 marks, AO2\* 4 marks and AO3 6 marks; or AO1 6 marks and AO3 10 marks
- 20 marks can be split into: AO1 8 marks, AO2\* 4 marks and AO3 8 marks; or AO1 8 marks and AO3 12 marks

\* You will know if you need to focus on AO2 (applying your knowledge and understanding) because there will be a scenario of some sort to apply it to and/or a comment about you needing to refer to the scenario, such as 'you must make reference to the context in your answer'. Without a scenario to apply your knowledge and understanding to, the marks will be AO1 and AO3 with the splits as outlined here. AO2 always has 4 marks, as you can see.


## Paper 3 (9PS03/01)

- Paper 3 is worth 30% of the total qualification. It is 2 hours long, with 80 marks.
- It has three sections, with all questions being compulsory. Section A covers research methods from Topics 1 to 5 in your course, using unseen material. Section B is based on unseen material and classic studies in Topics 1 to 5 of the specification, including relating the classic studies to the issues and debates and to areas and theories you have covered. Section C has 32 marks with two extended response questions covering issues and debates in psychology. Here too, unseen material can be used.
- Formulae and statistics tables (see the specification for these) are at the front of each paper and you can use a calculator. Use black ink as with all the papers.
- Use the number of marks to judge how long to spend on each question. 80 marks in 120 minutes could be around 1 mark per minute for short-answer questions, including reading time, and longer for extended response questions (around 1.5 marks per minute with reading time). For example, a 16-mark answer can take around 25 minutes and a 2-mark question around 2 minutes.

## How to use this section

- Revise all three parts in the Content Guidance section, your own notes and your textbook(s), and then attempt the questions relating to those sections.
- Work through one of the sections at a time, tackling the questions after each section, using both mock papers.
- After attempting to answer the questions, read through the advice and mark your own answer. Did you interpret the question successfully? Read through the answers given and note where the marks were awarded. Finally, read through the comments to see what a full answer should include.
- Specimen assessment materials can be found on the Pearson Edexcel website (<https://qualifications.pearson.com>), together with mark schemes. Look them up and try to answer the questions. You may need your teacher to help you to access these materials.
- The Questions & Answers section provides you with two 'mock' papers. Compare them to see what is common for Paper 3 and perhaps what is different so that you have a clear understanding of what Paper 3 entails.
- Use the definitions in the Content Guidance section and check your understanding of key terms.
- Go through all the exam tips to check your understanding of requirements and to get ideas for revision.
- Go through the two mock papers and look at the command words, checking what is required and making notes accordingly while also checking against the specification, where you'll find the command words in Appendix 6.

### Exam advice

All questions and answers are followed by exam advice. They indicate what a question requires, where credit is due, strengths in the answer, areas for improvement, specific problems, common errors, lack of clarity, irrelevance, mistakes in the meaning of terms and/or misinterpretation of the question. The comments also indicate how the answers might be marked in an exam. For points-based marking, indicators in the answers, like this , show exactly where marks are awarded. For levels-based marking there is an explanation of the level reached and often a previous exam question is referenced where you can find the relevant levels mark scheme using the Past Papers link on the Pearson Edexcel website. Where there is more than one answer, the Student A answer is the strongest.

### Logical chains of reasoning

A levels-based mark scheme involves 'logical chains of reasoning' to achieve the highest marks and these are achieved using arguments that overlap and build on one another. Check your understanding of issues such as using logical chains of reasoning, which you will know about from your work towards Papers 1 and 2.

# Mock Paper 3 (a)

## Section A Research methods

- 1 It seems well-established rituals help group cooperation. An experiment was carried out to see if people put into one group would trust members of their own group more than members of another group. Also, importantly, the study was to see if those sharing rituals would trust their group members more than a control group of participants not sharing rituals would trust their members. The study used novel rituals and newly formed groups. Participants were all put into an 'under-estimator' red group after having estimated the number of dots in images. They were told, incorrectly, that others were in an 'over-estimator' blue group, as this allowed the experimenters to set up pictures of these 'other participants' on a computer as well as using pictures of the red group participants.

Before the laboratory part of the study, at home for a week, those in the 'ritual' condition did a daily two-minute ritual using behaviours such as opening and closing the eyes and bowing the head. After the week, participants were brought into a lab situation and those in the 'ritual' condition went through the two-minute ritual together. Those in the control group did not do the ritual either at home or in the lab. Trust was measured by each participant carrying out a computer task that entailed choosing whether or not to give someone money. Participants in the 'ritual' condition tended to give money to someone they believed was in their group over someone they believed was in the blue group. However, this wasn't quite the case for those in the control group. It seemed that seeing a group do a similar ritual meant the participant was in some way more committed to the group than if they were just put into a group and told others were in a different group. Differences in trust between groups were more often found if a group involved carrying out the same ritual than if they did not.

Source: adapted from Hobson et al. (2017)

- 1 a State a two-tailed (non-directional) hypothesis for the 'rituals' study.

[2 marks]

Points-based marking. 'State' is the same as 'give' and means recall of information including — in this case, as a context is involved — showing a grasp of factual information presented. The answer must clearly relate to the context. Note the hypothesis must be two-tailed. Both marks are A02 as you find the hypothesis from the source, therefore applying your knowledge and understanding.



### Student A answer

Participants who see themselves in a certain group (the in-group) and share a group ritual will show a difference in trust, measured by how much money they give to someone in their perceived in-group compared with what they give to someone in the perceived out-group **a**. Participants who see themselves in a certain group but do not share a group ritual will not show a difference in trust when doing the 'money' task **b**.

**a** Both the DV, which is how much money (demonstrating trust) is offered to members in each group, **b** and the IV, which is whether the participant is in the ritual condition or not, are clearly stated so both marks are given. The answer correctly gives a two-tailed hypothesis. It does not say that the in-group person is likely to be given more money, which would make it one-tailed. It is the quality of the operationalisation in the hypothesis that is marked.

**2/2 marks awarded**

### Student B answer

Well-established rituals bring group cooperation.

This is what is in the source. Avoid repeating something in a source, as more will be required in an answer. 'Group' in the study is operationalised by putting a participant into an in-group with rituals, and 'cooperation' in the study is operationalised by how much money a participant gives to someone they see as being in their in-group and how much they give to someone they see as being in their out-group. The operationalised IV and DV must be in a hypothesis. Student B's answer is one-tailed, so is incorrect for that reason too. The source is rather complex — be sure to expect this complexity in Paper 3. Read through the source carefully a few times as many marks rely on understanding the source in this type of question. **0/2 marks awarded**

- 1 b Identify the experimental/research design used in the 'rituals' study.

[1 mark]

Points-based marking. 'Identify' asks you to select some key information from the source, in this case the design. Be sure to use one of the three research designs and not the research method, which is laboratory experiment. Other students have shown confusion between design and research method.

**a** This is correct. Different participants are in the two conditions. There is no suggestion of matching, so this is not matched pairs. Repeated measures means participants are in both conditions and this is not the case here.

**1/1 mark awarded**

### Student answer

Independent groups **a**.

- 1 c Explain why the researchers chose to use novel rituals and newly formed groups.

[3 marks]

Points-based marking. 'Explain' asks you to justify a point, giving an element of reasoning. The 'point' is A02 for 1 mark and the reasoning is 2 A03 marks. Consider why the study did not use established rituals in established groups but chose to study novel behaviours. All your points must be related explicitly to the source.

There are clear links to the source. **a** The point is that controlling for previous learning within a group means cause and effect conclusions can be drawn and novel rituals with newly formed groups provides this control. **b c** The justification marks are for explaining issues about previous learning in groups, and established attitudes and behaviours, that can be hard to control for. **3/3 marks awarded**

### Student answer

Using established rituals in established groups means the in-group and out-group attitudes and behaviours would be hard to separate for study. There would be previous learning about group members and group behaviour **a**. Using novel rituals and groups where there are not already preformed attitudes and behaviours means controlling such variables **b**. This makes it possible to draw cause and effect conclusions about the effects of ritual in an in-group on behaviour towards an out-group **c**.

- 1 d Using the information in Table 1 relating to the source, complete chi-squared for the given data.

[2 marks]

Table 1

	'Ritual' condition	Control condition	Total
Trusted own group more than out-group	Cell (a) Observed 30 Estimated 21	Cell (b) Observed 20 Estimated 29	50
No difference between trust depending on group	Cell (c) Observed 12 Estimated 21	Cell (d) Observed 38 Estimated 29	50
Total	42	58	100

Observed minus expected scores for each cell,  $(O - E)^2$ : a = 81, b = 81, c = 81, d = 81

Points-based marking. 'Calculate' means obtain a numerical answer showing relevant working. There are 2 A02 marks as you are applying your understanding of the test to the data given. Show all your working in the space provided, as you get marks for this along with the end result. You will find the chi-squared formula in the front of the exam paper.

### Student answer

Divide the square of  $O - E$  by the estimated score ( $E$ ) for each cell.

(a):  $81 \div 21 = 3.857$ , (b):  $81 \div 29 = 2.793$ , (c):  $81 \div 21 = 3.857$ ,

(d):  $81 \div 29 = 2.793$  **a**

Total the answers in the step above:

$3.857 + 2.793 + 3.857 + 2.793 = 13.3$  (chi-squared = 13.3) **b**

Explaining the calculations makes this answer clear. **a** There is 1 mark for the division by the expected value and **b** 1 for the totalling ( $\Sigma$ ) to give the correct result. **2/2 marks awarded**

- 1 e Explain one strength of using a lab experiment method for the 'rituals' study.

[3 marks]

Points-based marking. 'Explain' asks you to justify a point giving an element of reasoning. The 'strength' is A02 and the reasoning can gain 2 A03 marks. Give a strength and then go into some detail about it. Be sure that all your points relate explicitly to the source.

### Student A answer

One way of finding cause-and-effect conclusions is to use a laboratory experiment where extraneous variables are controlled, such as behaviour differences between group members, to rule out confounding variables **a**. Setting up a specific 2-minute ritual that is visible and can be shared means all in one condition have the same experiences, giving control **b**. It also means none in the control group have those experiences, controlling the IV and the main difference between the two conditions **c**. Putting everyone into one group, the red group, controls for differences between the two conditions too.

**a** The strength is that cause-and-effect can be claimed because of controls. Justifications include **b** giving the same experience (the ritual) to the experimental group and not to the control group, **c** successfully setting up the IV and putting everyone into the red group which helps to make experiences in both conditions the same (except for the IV). Paper 3 involves a lot of A03, so expect to be giving reasoning and justification quite often, as is shown here. Note there is a lot of relating back to the source, as is required.

**3/3 marks awarded**

### Student B answer

A strength is in using novel rituals and newly formed groups.

There is the idea that using novel situations is a strength, although the answer needs to emphasise the 'novel' part and say that 'new' is important relating to the experimental method. That would get 1 mark for a strength. Q1b talks about novel rituals and newly formed groups, so more is needed here than simply rewording another question. 'New' is about controls. See Student A's answer for more detail.  
**0/3 marks awarded**

- 1 f In any experiment researchers look out for participant variables. Explain why it is important to look out for participant variables in a study.

[2 marks]

Points-based marking. 'Explain' asks you to justify a point giving an element of reasoning. Understanding what 'participant variables' means is 1 A01 mark and the reasoning gains 1 A03 mark. Read all questions carefully. This question is about *all* experiments, not just the 'rituals' study. You do not have to relate your answers to the source study at all.

### Student answer

Participant variables are differences in the individual participants that can affect results, such as a participant being tired or hungry or having different experiences from another participant. Such experiences can give bias in findings <sup>a</sup>, because something like one participant's tiredness affects their behaviour rather than it being the IV affecting the DV <sup>b</sup>.

<sup>a</sup> There is clear understanding of what participant variables are, including that they can affect findings. <sup>b</sup> The reasoning is that bias can come from different participants having differing effects on their behaviour in a study, such as one being more tired than another. Examples of participant variables add to the justification.  
**2/2 marks awarded**

- 1 g In the 'rituals' study the experimenters could have interviewed some participants in the 'ritual' group after the lab experiment was over. Explain what the value of interviewing might be in relation to their aims. [3 marks]

Points-based marking. 'Explain' asks you to justify a point giving an element of reasoning. There is 1 A02 mark for applying your understanding to the idea of using interviewing in this study and 2 A03 marks for justification in your answer.

<sup>a</sup> The value is in getting qualitative data and the answer clearly shows the advantages of doing that. <sup>b</sup> The reasoning is that people can share their thoughts and <sup>c</sup> a further point clearly relates to the value of doing that for the aims of this study. The answer shows that someone can talk about whether the ritual helped them to feel part of the group. In Paper 3, it is said that an answer can miss giving enough reasoning and justification in the way of argument. Be sure to explore points in your answer in order to achieve the A03 marks.

### Student answer

Interviewing means qualitative data can be gathered, giving richness and detail directly from participants, such as their ideas about the rituals <sup>a</sup>, which helps validity. This has the advantage of uncovering someone's thoughts relating to the study such as how they felt about doing the ritual at home <sup>b</sup>. Participants could say if they felt the joint ritual helped them to feel part of the group or not, which helps to address the study's aims of seeing if rituals helped cooperation in groups <sup>c</sup>.

**3/3 marks awarded**