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AS Psychology

Specification

Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology (8PS0)

First teaching from September 2015

First certification from 2016

Issue 2

Pearson

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Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology (8PS0)

Specification

First certification 2016

Issue 2

Pearson

Edexcel, BTEC and LCCI qualifications

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About Pearson

Pearson is the world's leading learning company, with 35,000 employees in more than 70 countries working to help people of all ages to make measurable progress in their lives through learning. We put the learner at the centre of everything we do, because wherever learning flourishes, so do people. Find out more about how we can help you and your learners at qualifications.pearson.com

This specification is Issue 2. Key changes are sidelined. We will inform centres of any changes to this issue. The latest issue can be found on the Pearson website: qualifications.pearson.com

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Summary of Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology specification Issue 2 changes

Summary of changes made between previous issue and this current issue	Page number
Amendment made to fifth bullet point for 1.5.1 in the 'conducting the practical research exercise' section.	8
Additional bullet point added to 3.5.1 in the 'conducting the practical research exercise' section.	15
Amendment made to the fourth bullet for 4.5.1 in the 'conducting the practical research exercise' section.	18
Spearman's rank critical values have been updated.	41
Chi-squared distribution formula – statement at the bottom changed to 'The calculated value must be equal to or exceed the critical value in this table for significance to be shown.'	42
Critical values for the Mann-Whitney U test have been updated.	43–44

If you need further information on these changes or what they mean, contact us via our website at: qualifications.pearson.com/en/support/contact-us.html.

From Pearson's Expert Panel for World Class Qualifications

"The reform of the qualifications system in England is a profoundly important change to the education system. Teachers need to know that the new qualifications will assist them in helping their learners make progress in their lives.

When these changes were first proposed we were approached by Pearson to join an 'Expert Panel' that would advise them on the development of the new qualifications.

We were chosen, either because of our expertise in the UK education system, or because of our experience in reforming qualifications in other systems around the world as diverse as Singapore, Hong Kong, Australia and a number of countries across Europe.

We have guided Pearson through what we judge to be a rigorous qualification development process that has included:

- Extensive international comparability of subject content against the highest-performing jurisdictions in the world
- Benchmarking assessments against UK and overseas providers to ensure that they are at the right level of demand
- Establishing External Subject Advisory Groups, drawing on independent subject-specific expertise to challenge and validate our qualifications
- Subjecting the final qualifications to scrutiny against the DfE content and Ofqual accreditation criteria in advance of submission.

Importantly, we have worked to ensure that the content and learning is future oriented. The design has been guided by what is called an 'Efficacy Framework', meaning learner outcomes have been at the heart of this development throughout.

We understand that ultimately it is excellent teaching that is the key factor to a learner's success in education. As a result of our work as a panel we are confident that we have supported the development of qualifications that are outstanding for their coherence, thoroughness and attention to detail and can be regarded as representing world-class best practice."

Sir Michael Barber (Chair)
Chief Education Advisor, Pearson plc

Bahram Bekhradnia
President, Higher Education Policy Institute

Dame Sally Coates
Principal, Burlington Danes Academy

Professor Robin Coningham
Pro-Vice Chancellor, University of Durham

Dr Peter Hill
Former Chief Executive ACARA

Professor Lee Sing Kong
Director, National Institute of Education, Singapore

Professor Jonathan Osborne
Stanford University

Professor Dr Ursula Renold
Federal Institute of Technology, Switzerland

Professor Bob Schwartz
Harvard Graduate School of Education

Introduction

The Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology is designed for use in schools and colleges. It is part of a suite of GCE qualifications offered by Pearson.

Purpose of the specification

This specification sets out:

- the objectives of the qualification
- any other qualification that a student must have completed before taking the qualification
- any prior knowledge and skills that the student is required to have before taking the qualification
- any other requirements that a student must have satisfied before they will be assessed or before the qualification will be awarded
- the knowledge and understanding that will be assessed as part of the qualification
- the method of assessment and any associated requirements relating to it
- the criteria against which a student's level of attainment will be measured (such as assessment criteria).

Rationale

The Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology meets the following purposes, which fulfil those defined by the Office of Qualifications and Examinations Regulation (Ofqual) for GCE qualifications in their *GCE Qualification Level Conditions and Requirements* document, published in April 2014.

The purposes of this qualification are to:

- provide evidence of students' achievements in a robust and internationally comparable post-16 course of study that is a sub-set of Advanced GCE content
- enable students to broaden the range of subjects they study.

Qualification aims and objectives

The aims and objectives of the Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology are to enable students to:

- develop essential knowledge and understanding of different areas of the subject and how they relate to each other
- develop and demonstrate a deep appreciation of the skills, knowledge and understanding of scientific methods
- develop competence and confidence in a variety of practical, mathematical and problem-solving skills
- develop their interest in and enthusiasm for the subject, including developing an interest in further study and careers associated with the subject
- appreciate how society makes decisions about scientific issues and how the sciences contribute to the success of the economy and society.

The context for the development of this qualification

All our qualifications are designed to meet our World Class Qualification Principles[1] and our ambition to put the student at the heart of everything we do.

We have developed and designed this qualification by:

- reviewing other curricula and qualifications to ensure that it is comparable with those taken in high-performing jurisdictions overseas
- consulting with key stakeholders on content and assessment, including learned bodies, subject associations, higher-education academics, teachers and employers to ensure this qualification is suitable for a UK context
- reviewing the legacy qualification and building on its positive attributes.

This qualification has also been developed to meet criteria stipulated by Ofqual in their documents *GCE Qualification Level Conditions and Requirements* and *GCE AS and A level regulatory requirements for biology, chemistry, physics and psychology*, published by the Department for Education (DfE) in April 2014.

[1] Pearson's World Class Qualification Principles ensure that our qualifications are:

- **demanding**, through internationally benchmarked standards, encouraging deep learning and measuring higher-order skills
- **rigorous**, through setting and maintaining standards over time, developing reliable and valid assessment tasks and processes, and generating confidence in end users of the knowledge, skills and competencies of certified students
- **inclusive**, through conceptualising learning as continuous, recognising that students develop at different rates and have different learning needs, and focusing on progression
- **empowering**, through promoting the development of transferable skills, see *Appendix 1*.

Contents

Qualification at a glance

The Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology is structured into four topic areas. These topics focus on the areas which have laid the foundations of modern psychological understanding.

This qualification consists of two externally examined papers.

Students must complete all assessment in May/June in any single year.

Paper 1: Social and cognitive psychology	***Paper code: 8PS0/01**
• Externally assessed • Availability: May/June • First assessment: 2016	**50% of the total qualification**
Overview of content • Topic 1: Social psychology • Topic 2: Cognitive psychology	
Overview of assessment • Students must answer all questions from three sections. • **Section A** has 29 marks and comprises mixed question types, covering the topic area of social psychology. • **Section B** has 29 marks and comprises mixed question types, covering the topic area of cognitive psychology. • **Section C** has 12 marks and comprises one extended response question, covering both social and cognitive psychology topic areas. • The assessment is 1 hour 30 minutes. • The assessment consists of 70 marks. • The formulae and statistical tables given in *Appendix 4: Formulae and statistical tables* will also be given in the paper. • Calculators may be used in the examination.	

*See *Appendix 5: Codes* for description of this code and all other codes relevant to this qualification.

Paper 2: Biological psychology and learning theories ***Paper code: 8PS0/02**	
• Externally assessed • Availability: May/June • First assessment: 2016	**50% of the total qualification**
Overview of content • Topic 3: Biological psychology • Topic 4: Learning theories	
Overview of assessment • Students must answer all questions from three sections. • **Section A** has 29 marks and comprises mixed question types, covering the topic area of biological psychology. • **Section B** has 29 marks and comprises mixed question types, covering the topic area of learning theories. • **Section C** has 12 marks and comprises one extended response question, covering both biological psychology and learning theories topic areas. • The assessment is 1 hour 30 minutes. • The assessment consists of 70 marks. • The formulae and statistical tables given in *Appendix 4: Formulae and statistical tables* will also be given in the paper. • Calculators may be used in the examination.	

*See *Appendix 5: Codes* for description of this code and all other codes relevant to this qualification.

Assessment Objectives and weightings

Students must:		% in GCE
AO1	Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures	35–40%
AO2	Apply knowledge and understanding of scientific ideas, processes, techniques and procedures: • in a theoretical context • in a practical context • when handling qualitative data • when handling quantitative data	30–35%
AO3	Analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to: • make judgements and reach conclusions • develop and refine practical design and procedures	30–35%
	Total	**100%**

Knowledge, skills and understanding

Content overview

Students should know, understand, apply, critically analyse and evaluate content in the following topic areas, performing procedures and making connections where appropriate.

Content indicated with an 'e.g.' is intended to further illustrate core material and is indicative of content that may be assessed. Additional examples not given in this specification may also be assessed.

There are opportunities for students to develop mathematical skills throughout the content. They are required to apply the skills to relevant psychological contexts. Please see *Appendix 3: Mathematical skills*, for further information.

Assessment overview

Students will be assessed through two examination papers.

Paper 1 will assess content from Topics 1 and 2.

Paper 2 will assess content from Topics 3 and 4.

Each examination paper will also include an extended writing question in Section C which will require students to draw on both topics assessed in the paper.

The formulae and statistical tables given in *Appendix 4: Formulae and statistical tables* will also be given in the paper.

Calculators may be used in the examination.

Students may be required to respond to stimulus material using psychological concepts, theories and/or research from across topic areas.

Students may be asked to consider issues of validity, reliability, credibility, generalisability, objectivity, and subjectivity in their evaluation of studies and theories.

Students should be able to define any terms given in the specification.

Topic 1: Social psychology

Topic overview

Students must show understanding that social psychology is about aspects of human behaviour that involve the individual's relationship to other persons, groups and society, including cultural influences on behaviour.

Individual differences and developmental psychology must be considered when learning about obedience, prejudice, personality and cultural influences on social behaviour.

Subject content	What students need to learn:
1.1 Content	Obedience 1.1.1 Theories of obedience, including agency theory and social impact theory. 1.1.2 Research into obedience, including Milgram's research into obedience and three of his variation studies: Rundown Office Block (Experiment 10), Telephonic instructions (Experiment 7), Ordinary man gives orders (Experiment 13) as they demonstrate situational factors that encourage dissent. 1.1.3 Factors affecting obedience and dissent/resistance to obedience, including individual differences (personality and gender), situation and culture.
	Prejudice 1.1.4 Explanations and research into prejudice, including social identity theory (Tajfel and Turner, 1979, 1986) and realistic conflict theory (Sherif, 1966). 1.1.5 Factors affecting prejudice (and discrimination), including individual differences (personality), situation and culture.
	1.1.6 Individual differences in obedience/prejudice • Obedience is affected by personality. • Prejudice can have an explanation linked to personality. 1.1.7 Developmental psychology in obedience/prejudice • Obedience can be affected by gender and culture, which come from environmental effects. • Prejudice can be affected by culture, which comes from environmental effects.

Subject content	What students need to learn:
1.2 Methods	Self-reporting data 1.2.1 Designing and conducting questionnaires and interviews, considering researcher effects. 1.2.2 Unstructured, semi-structured and structured interviews, open, closed (including ranked scale) questions. 1.2.3 Alternate hypotheses.
	Sample selection and techniques 1.2.4 Random, stratified, volunteer and opportunity techniques.
	Qualitative and quantitative data 1.2.5 Analysis of quantitative data: calculating measures of central tendency, frequency tables, graphical presentation using a bar chart, measures of dispersion (range and standard deviation). 1.2.6 Analysis of qualitative data using thematic analysis.
	Ethical guidelines: 1.2.7 British Psychological Society (BPS) code of ethics and conduct (2009), including risk management when carrying out research in psychology.
1.3 Studies	Classic study 1.3.1 Sherif et al. (1954/1961) Intergroup conflict and cooperation: The Robbers Cave Experiment.
	One contemporary study from the following: 1.3.2 Burger (2009) Replicating Milgram: Would people still obey today? 1.3.3 Reicher and Haslam (2006) Rethinking the psychology of tyranny. 1.3.4 Cohrs et al. (2012) Individual differences in ideological attitudes and prejudice: evidence from peer report data.
1.4 Key questions	1.4.1 One key question of relevance to today's society, discussed as a contemporary issue for society rather than an academic argument.
	1.4.2 Concepts, theories and/or research (as appropriate to the chosen key question) drawn from social psychology as used in this qualification.
	Suitable examples • How can knowledge of social psychology be used to reduce prejudice in situations such as crowd behaviour or rioting? • How can social psychology be used to explain heroism?

Subject content	What students need to learn:
1.5 Practical investigation	1.5.1 One practical research exercise to gather data relevant to topics covered in social psychology. This practical research exercise must adhere to ethical principles in both content and intention.
	In conducting the practical research exercise, students must: • design and conduct a questionnaire to gather both qualitative and quantitative data to look for a difference in the data • consider questionnaire construction, sampling decisions and ethical issues • collect and present an analysis of quantitative data using measures of central tendency, measures of dispersion, (including range and standard deviation as appropriate), bar graph and frequency table • collect and present an analysis of qualitative data using thematic analysis • consider strengths and weaknesses of the questionnaire and possible improvements • write up the procedure, results and discussion section of a report.
	Suitable examples • A questionnaire to see if males or females perceive themselves to be more obedient. • An investigation into in-group favouritism.

Topic 2: Cognitive psychology

Topic overview

Students must show understanding that cognitive psychology is about the role of cognition/cognitive processes in human behaviour. Processes include perception, memory, selective attention, language and problem solving. The cognitive topic area draws on the likeness of cognitive processing to computer processing.

Individual differences and developmental psychology must be considered when learning about memory differences and memory deficits and how this develops as the brain ages.

Subject content	What students need to learn:
2.1 Content	Memory 2.1.1 The working memory model (Baddeley and Hitch, 1974). 2.1.2 The multi-store model of memory (Atkinson and Shiffrin, 1968), including short- and long-term memory and ideas about information processing, encoding, storage and retrieval, capacity and duration. 2.1.3 Explanation of long-term memory – episodic and semantic memory (Tulving, 1972). 2.1.4 Reconstructive memory (Bartlett, 1932), including schema theory.
	2.1.5 Individual differences in memory • Memory can be affected by individual differences in processing speed or by schemas that guide the reconstructive nature of memory. • Autobiographical memory is by nature individual. 2.1.6 Developmental psychology in memory, at least one of these: • Sebastián and Hernández-Gil (2012) discuss developmental issues in memory span development, which is low at 5 years old, then develops as memory develops, up to 17 years old. • Dyslexia affects children's memory span and working memory which can affect their learning. • The impact of Alzheimer's on older people and the effects on their memory.

Subject content	What students need to learn:
2.2 Methods	Experiments 2.2.1 Designing and conducting experiments, including field and laboratory experiments. 2.2.2 Independent and dependent variables. 2.2.3 Experimental and null hypotheses. 2.2.4 Directional (one-tailed) and non-directional (two-tailed) tests and hypotheses. 2.2.5 Experimental and research designs: repeated measures, independent groups and matched pairs. 2.2.6 Operationalisation of variables, extraneous variables and confounding variables. 2.2.7 Counterbalancing, randomisation and order effects. 2.2.8 Situational and participant variables. 2.2.9 Objectivity, reliability and validity **(internal, predictive and ecological)**. 2.2.10 Experimenter effects, demand characteristics and control issues.
	2.2.11 Quantitative data analysis • Analysis of quantitative data: calculate measures of central tendency, frequency tables, measures of dispersion (range and standard deviation), percentages. • Graphical presentation of data (bar graph, histogram).
	2.2.12 Decision making and interpretation of inferential statistics • Non-parametric test of difference: Mann-Whitney U and Wilcoxon. • Probability and levels of significance ($p \leq .10$ $p \leq .05$ $p \leq .01$). • Observed and critical values, and sense checking of data. • One- or two-tailed regarding inferential testing. • Type I and type II errors. • Normal and skewed distribution.
	2.2.13 Case study of brain-damaged patients, including Henry Molaison (HM) and the use of qualitative data, including strengths and weaknesses of the case study.

Subject content	What students need to learn:
2.3 Studies	Classic study 2.3.1 Baddeley (1966b) Working memory model: The influence of acoustic and semantic similarity on long-term memory for word sequences.
	One contemporary study from the following: 2.3.2 Schmolck et al. (2002) Semantic knowledge in patient HM and other patients with bilateral medial and lateral temporal lobe lesions. 2.3.3 Steyvers and Hemmer (2012) Reconstruction from memory in naturalistic environments. 2.3.4 Sebastián and Hernández-Gil (2012) Developmental pattern of digit span in Spanish population.
2.4 Key questions	2.4.1 One key question of relevance to today's society, discussed as a contemporary issue for society rather than an academic argument.
	2.4.2 Concepts, theories and/or research (as appropriate to the chosen key question) drawn from cognitive psychology as used in this specification.
	Suitable examples • How can psychologists' understanding of memory help patients with dementia? • How can knowledge of working memory be used to inform the treatment of dyslexia?

Subject content	What students need to learn:
2.5 Practical investigation	2.5.1 One practical research exercise to gather data relevant to topics covered in cognitive psychology. This practical research exercise must adhere to ethical principles in both content and intention.
	In conducting the practical research exercise, students must: • design and conduct a laboratory experiment to gather quantitative data and include descriptive statistics as analysis and a non-parametric test of difference • make design decisions when planning and conducting their experiment, including experimental design, sampling decisions, operationalisation, control, ethical considerations, hypothesis construction, experimenter effects and demand characteristics • collect, present and comment on data gathered, including using measures of central tendency (mean, median, mode as appropriate); measures of dispersion (including range and standard deviation as appropriate); bar graph, histogram, frequency graph as relevant; normal distribution if appropriate and draw conclusions • use a Mann-Whitney U or Wilcoxon non-parametric test of difference to test significance (as appropriate), including level of significance and critical/observed values • consider strengths and weaknesses of the experiment, and possible improvements • write up the procedure, results and discussion section of a report.
	Suitable examples • Dual task experiment to investigate components of working memory. • An experiment to look at acoustic similarity of words and the effect on short-term memory.

Topic 3: Biological psychology

Topic overview

Students must show understanding that biological psychology is about the mechanisms within our body and how they affect our behaviour, specifically focusing on aggression.

Individual differences and developmental psychology must be considered when learning about issues such as aggression caused by an accident and how the function of structures of the brain can be affected by the environment.

Subject content	What students need to learn:
3.1 Content	3.1.1 The central nervous system (CNS) and neurotransmitters in human behaviour, including the structure and role of the neuron, the function of neurotransmitters and synaptic transmission 3.1.2 The effect of recreational drugs on the transmission process in the central nervous system. 3.1.3 The structure of the brain, different brain areas (e.g. pre-frontal cortex) and brain functioning as an explanation of aggression as a human behaviour. 3.1.4 The role of evolution and natural selection to explain human behaviour, including aggression. 3.1.5 Biological explanation of aggression as an alternative to Freud's psychodynamic explanation, referring to the different parts of the personality (id, ego, superego), the importance of the unconscious, and catharsis. 3.1.6 The role of hormones (e.g. testosterone) to explain human behaviour such as aggression.
	3.1.7 Individual differences: • Damage to the brain may be affected by individual differences, in case studies of brain damaged patients when it is assumed there are no individual differences. • Freud's view of the personality shows it develops individual differences. 3.1.8 Developmental psychology • The role of evolution in human development. • The role of hormones in human development.

Subject content	What students need to learn:
3.2 Methods	3.2.1 Correlational research • The use of the correlational research method in psychology including co-variables. • Types of correlation: positive, negative and including the use of scatter diagrams. • Issues surrounding the use of correlations in psychology; issues with cause and effect, other variables.
	3.2.2 Analysis of correlational data • Analysis of, use of, and drawing conclusions from correlational studies, including scatter diagrams, using inferential statistical testing (use of Spearman's rho) and issues of statistical significance; critical and observed values. • The use of alternate, experimental and null hypotheses. The use of IV and DV in experiments and co-variables in correlations. The use of control groups, randomising to groups, sampling.
	3.2.3 Other biological research methods • Brain-scanning techniques (CAT, PET, and fMRI). • The use of brain-scanning techniques to investigate human behaviour, e.g. aggression. • One twin study and one adoption study, e.g. Gottesman and Shields (1966); Ludeke et al. (2013).
3.3 Studies	Classic study 3.3.1 Raine et al. (1997) Brain abnormalities in murderers indicated by positron emission tomography.
	One contemporary study from the following: 3.3.2 Li et al. (2013) Abnormal function of the posterior cingulate cortex in heroin addicted users during resting-state and drug-cue stimulation task. 3.3.3 Brendgen et al. (2005) Examining genetic and environmental effects on social aggression: A study of 6-year-old twins. 3.3.4 Van den Oever et al. (2008) Prefrontal cortex AMPA receptor plasticity is crucial for cue-induced relapse for heroin-seeking.

Subject content	What students need to learn:
3.4 Key questions	3.4.1 One key question of relevance to today's society, discussed as a contemporary issue for society rather than as an academic argument.
	3.4.2 Concepts, theories and/or research (as appropriate to the chosen key question) drawn from biological psychology as used in this specification.
	Suitable examples • How effective is drug therapy for treating addictions? For example methadone to treat heroin addiction. • What are the implications for society if aggression is found to be caused by nature not nurture.
3.5 Practical investigation	3.5.1 One practical research exercise to gather data relevant to topics covered in biological psychology. This practical research exercise must adhere to ethical principles in both content and intention.
	In conducting the practical research exercise, students must: • design and conduct a correlational study • link their research to aggression or attitudes to drug use • include inferential statistical testing (Spearman's rho) and explain the significance of the result and the use of levels of significance. Students must also be able to use descriptive statistics (strength/direction) to explain the relationship • produce an abstract of the research method and a discussion section which includes conclusions • include research question/hypothesis, research method, sampling, ethical considerations, data-collection tools, data analysis, results, discussion. • consider strengths and weaknesses of the correlational study and possible improvements.
	Suitable examples • A correlation into age and attitudes to drug use. • A correlation to see if there is a relationship between height and a self-rating of aggressive tendencies.

Topic 4: Learning theories

Topic overview

Students must show understanding that learning theories are about learning from the environment and the effects of conditioning, reinforcement, punishment, the role of reward and social learning on the organism.

Individual differences and developmental psychology must be considered when learning about the effect of rewards and punishment on individuals and how children develop through the different ways of learning, including social learning.

Subject content	What students need to learn:
4.1 Content	Classical conditioning 4.1.1 The main features of classical conditioning, including: unconditioned stimulus (UCS); unconditioned response (UCR); conditioned stimulus (CS); neutral stimulus (NS); conditioned response (CR); extinction, spontaneous recovery and stimulus generalisation. 4.1.2 Pavlov (1927) experiment with salivation in dogs.
	Operant conditioning 4.1.3 The main features of operant conditioning, including: types of reinforcement and punishment (positive and negative). 4.1.4 Properties of reinforcement, including primary and secondary reinforcement and schedules of reinforcement. 4.1.5 Behaviour modification including 'shaping' behaviour.
	4.1.6 The main features of social learning theory, including observation, imitation, modelling and vicarious reinforcement. 4.1.7 Social learning 'stages' of attention, retention, reproduction and motivation (reinforcement). 4.1.8 Bandura (1961, 1963) original Bobo doll experiments. 4.1.9 Bandura (1965) Bobo doll experiment with vicarious reinforcement.
	4.1.10 How learning theories explain the acquisition and maintenance of phobias. 4.1.11 Treatments for phobias based on theories of learning, including systematic desensitisation and one other.

Subject content	What students need to learn:
	4.1.12 Individual differences How people differ because of different environmental influences and experiences, for example in the form of rewards and punishments, and models observed. 4.1.13 Developmental psychology • The idea that development is through patterns of rewards and punishments. • Social learning theory's idea that development is through observation of others.
4.2 Methods	4.2.1 Human research • The use of the observational research method in psychology, including the gathering of both qualitative and quantitative data (including tallying, event and time sampling). • Types of observation: participant, non-participant, structured, naturalistic, overt and covert. • Use of content analysis as a research method.
	4.2.2 Animal research • The use of animals in laboratory experiments where results can be related to humans. • Ethical issues regarding the use of animals in laboratory experiments, including Scientific Procedures Act (1986) and Home Office Regulations.
	4.2.3 Analysis of data • With regard to inferential statistics: reasons for choosing a chi squared test; the chi squared test. • Analysis of qualitative data using thematic analysis.
	4.2.4 Scientific status of psychology, including: • replicability, reliability, validity (internal, predictive and ecological), reductionism, falsification, empiricism, hypothesis testing, and use of controls.

Subject content	What students need to learn:
4.3 Studies	Classic study 4.3.1 Watson and Rayner (1920) Little Albert: Conditioned emotional reactions.
	One contemporary study from the following: 4.3.2 Becker et al. (2002) Eating behaviours and attitudes following prolonged exposure to television among ethnic Fijian adolescent girls. 4.3.3 Bastian et al. (2011) Cyber-dehumanization: Violent video game play diminishes our humanity. 4.3.4 Capafóns et al. (1998) Systematic desensitisation in the treatment of the fear of flying.
4.4 Key questions	4.4.1 One key question of relevance to today's society, discussed as a contemporary issue for society rather than as an academic argument.
	4.4.2 Concepts, theories and/or research (as appropriate to the chosen key question) drawn from learning theories as used in this specification.
	Suitable examples • Is the influence of role models and celebrities something that causes anorexia? • Would it be a good idea for airline companies to offer treatment programmes for fear of flying?
4.5 Practical investigation	4.5.1 Two observations (one observation can be carried out if both qualitative and quantitative data are gathered in the same observation).
	In conducting the practical research exercise, students must: • ensure that observations relate to an aspect of learned behaviour, such as behaviour of different sexes, driving characteristics, age-related behaviour, politeness and helping behaviour • ensure that observations enable the gathering of both qualitative and quantitative data (including the use of note taking, tallying and thematic analysis) • analyse the findings to produce results, including using a chi squared test • consider strengths and weaknesses of the studies and possible improvements • write up the results of the quantitative data, including appropriate graphs and tables • write up the results of the qualitative analysis (thematic analysis).
	Suitable examples • How age and sex affect driving speed. • Investigating the differences in helpful or polite behaviour in men and women.

Assessment

Assessment summary

Summary of table of assessment

Students must complete all assessment in May/June in any single year.

The formulae and statistical tables given in *Appendix 4: Formulae and statistical tables* will also be given in both papers.

Calculators may be used in each examination.

Paper 1: Social and cognitive psychology

***Paper code: 8PS0/01**

- Students must answer all questions from three sections.
- **Section A** has 29 marks and comprises mixed question types, covering the topic area of social psychology.
- **Section B** has 29 marks and comprises mixed question types, covering the topic area of cognitive psychology.
- **Section C** has 12 marks and comprises one extended response question, covering both social and cognitive psychology topic areas.
- The assessment is 1 hour 30 minutes.
- The assessment consists of 70 marks.
- First assessment: May/June 2016.

50% of the total qualification

Paper 2: Biological psychology and learning theories

***Paper code: 8PS0/02**

- Students must answer all questions from three sections.
- **Section A** has 29 marks and comprises mixed question types, covering the topic area of biological psychology.
- **Section B** has 29 marks and comprises mixed question types, covering the topic area of learning theories.
- **Section C** has 12 marks and comprises one extended response question, covering both biological psychology and learning theories topic areas.
- The assessment is 1 hour 30 minutes.
- The assessment consists of 70 marks.
- First assessment: May/June 2016.

50% of the total qualification

The sample assessment materials can be found in the *Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology Sample Assessment Materials* document.

*See *Appendix 5: Codes* for a description of this code and all other codes relevant to this qualification.

Assessment Objectives and weightings

Students must:		% in GCE
AO1	Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures	35–40%
AO2	Apply knowledge and understanding of scientific ideas, processes, techniques and procedures: • in a theoretical context • in a practical context • when handling qualitative data • when handling quantitative data	30–35%
AO3	Analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to: • make judgements and reach conclusions • develop and refine practical design and procedures	30–35%
	Total	**100%**

Breakdown of Assessment Objectives

Paper	Assessment Objectives			Total for all Assessment Objectives
	AO1	AO2	AO3	
Paper 1: Social and cognitive psychology	17–19%	14–19%	14–18%	50%
Paper 2: Biological psychology and learning theories	17–19%	14–19%	14–18%	50%
Total for this qualification	35–40%	30–35%	30–35%	**100%**

Entry and assessment information

Student entry

Details of how to enter students for the examinations for this qualification can be found in our *UK Information Manual*. A copy is made available to all examinations officers and is available on our website at: www.edexcel.com/iwantto/Pages/uk-information-manual.aspx

Discount code and performance tables

Centres should be aware that students who enter for more than one GCE qualification with the same discount code will have only one of the grades they achieve counted for the purpose of the School and College Performance Tables This will be the grade for the larger qualification (i.e. the A Level grade rather than the AS grade). If the qualifications are the same size, then the better grade will be counted (please see *Appendix 5: Codes*).

Please note that there are two codes for AS GCE qualifications; one for Key Stage 4 (KS4) performance tables and for the 16-18 performance tables. If a KS4 student achieves both a GCSE and an AS with the same discount code the AS result will be counted over the GCSE result.

Students should be advised that if they take two qualifications with the same discount code colleges, universities and employers they wish to progress to are very likely to take the view that they have achieved only one of the two GCEs. The same view may be taken if students take two GCE qualifications that have different discount codes but have significant overlap of content. Students or their advisers who have any doubts about their subject combinations should check with the institution to which they wish to progress to before embarking on their programmes.

Access arrangements, reasonable adjustments and special consideration

Access arrangements

Access arrangements are agreed before an assessment. They allow students with special educational needs, disabilities or temporary injuries to:

- access the assessment
- show what they know and can do without changing the demands of the assessment.

The intention behind an access arrangement is to meet the particular needs of an individual student with a disability without affecting the integrity of the assessment. Access arrangements are the principal way in which awarding bodies comply with the duty under the Equality Act 2010 to make 'reasonable adjustments'.

Access arrangements should always be processed at the start of the course. Students will then know what is available and have the access arrangement(s) in place for assessment.

Reasonable adjustments

The Equality Act 2010 requires an awarding organisation to make reasonable adjustments where a person with a disability would be at a substantial disadvantage in undertaking an assessment. The awarding organisation is required to take reasonable steps to overcome that disadvantage.

A reasonable adjustment for a particular person may be unique to that individual and therefore might not be in the list of available access arrangements.

Whether an adjustment will be considered reasonable will depend on a number of factors, which will include:

- the needs of the student with the disability
- the effectiveness of the adjustment
- the cost of the adjustment; and
- the likely impact of the adjustment on the student with the disability and other students.

An adjustment will not be approved if it involves unreasonable costs to the awarding organisation, timeframes or affects the security or integrity of the assessment. This is because the adjustment is not 'reasonable'.

Special consideration

Special consideration is a post-examination adjustment to a student's mark or grade to reflect temporary injury, illness or other indisposition at the time of the examination/assessment, which has had, or is reasonably likely to have had, a material effect on a candidate's ability to take an assessment or demonstrate his or her level of attainment in an assessment.

Further information

Please see our website for further information about how to apply for access arrangements and special consideration.

For further information about access arrangements, reasonable adjustments and special consideration, please refer to the JCQ website: www.jcq.org.uk.

Malpractice

Candidate malpractice

Candidate malpractice refers to any act by a candidate that compromises or seeks to compromise the process of assessment or which undermines the integrity of the qualifications or the validity of results/certificates.

Candidate malpractice in controlled assessments discovered before the candidate has signed the declaration of authentication form does not need to be reported to Pearson.

Candidate malpractice found in controlled assessments after the declaration of authenticity has been signed, and in examinations **must** be reported to Pearson on a *JCQ Form M1* (available at www.jcq.org.uk/exams-office/malpractice). The completed form can be emailed to pqsmalpractice@pearson.com or posted to Investigations Team, Pearson, 190 High Holborn, London, WC1V 7BH. Please provide as much information and supporting documentation as possible. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report candidate malpractice constitutes staff or centre malpractice.

Staff/centre malpractice

Staff and centre malpractice includes both deliberate malpractice and maladministration of our qualifications. As with candidate malpractice, staff and centre malpractice is any act that compromises or seeks to compromise the process of assessment or undermines the integrity of the qualifications or the validity of results/certificates.

All cases of suspected staff malpractice and maladministration **must** be reported immediately, before

any investigation is undertaken by the centre, to *Pearson on a JCQ Form M2(a)* (available at www.jcq.org.uk/exams-office/malpractice). The form, supporting documentation and as much information as possible can be emailed to pqsmalpractice@pearson.com or posted to Investigations Team, Pearson, 190 High Holborn, London, WC1V 7BH. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report malpractice itself constitutes malpractice.

More detailed guidance on malpractice can be found in the latest version of the document *General and Vocational Qualifications Suspected Malpractice in Examinations and Assessments Policies and Procedures,* available at www.jcq.org.uk/exams-office/ malpractice.

Equality Act 2010 and Pearson equality policy

Equality and fairness are central to our work. Our equality policy requires all students to have equal opportunity to access our qualifications and assessments, and our qualifications to be awarded in a way that is fair to every student.

We are committed to making sure that:

- students with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to students who do not share that characteristic
- all students achieve the recognition they deserve for undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

You can find details on how to make adjustments for students with protected characteristics in the policy document *Access Arrangements, Reasonable Adjustments and Special Consideration*, which is on our website, www.edexcel.com/Policies.

Awarding and reporting

This qualification will be graded, awarded and certificated to comply with the requirements of the current Code of Practice, published by the Office of Qualifications and Examinations Regulation (Ofqual).

The Advanced Subsidiary GCE qualification will be graded certificated on a five-grade scale from A to E using the total subject mark. Individual papers are not graded.

The first certification opportunity for the Pearson Edexcel Level 3 Advanced Subsidiary GCE in Psychology will be 2016.

Students whose level of achievement is below the minimum judged by Pearson to be of sufficient standard to be recorded on a certificate will receive an unclassified U result.

Language of assessment

Assessment of this qualification will be available in English. All student work must be in English.

Other information

Student recruitment

Pearson follows the JCQ policy concerning recruitment to our qualifications in that:

- they must be available to anyone who is capable of reaching the required standard
- they must be free from barriers that restrict access and progression
- equal opportunities exist for all students.

Prior learning and other requirements

There are no prior learning or other requirements for this qualification.

Progression

Students will develop transferable skills that support study in a wide range of subjects at university and the transition to employment, including quantitative and analytical analysis and forming and testing hypotheses. The development and application of mathematical skills prepare students for the study of psychology and related courses at university.

Students can progress from this qualification to:

- an Advanced GCE in Psychology
- higher education qualifications such as psychology degrees and biology-related courses
- further education courses such as BTEC Higher Nationals, for example the Higher Nationals in Applied Biology and Biological Sciences for Industry.

Appendices

Appendix 1: Transferable skills

The need for transferable skills

In recent years, higher education institutions and employers have consistently flagged the need for students to develop a range of transferable skills to enable them to respond with confidence to the demands of undergraduate study and the world of work.

The Organisation for Economic Co-operation and Development (OECD) defines skills, or competencies, as 'the bundle of knowledge, attributes and capacities that can be learned and that enable individuals to successfully and consistently perform an activity or task and can be built upon and extended through learning.'[1]

To support the design of our qualifications, the Pearson Research Team selected and evaluated seven global transferrable skills frameworks. Following on from this process, we identified the National Research Council's (NRC) framework as the most evidence-based and robust skills framework. We adapted the framework slightly to include the Program for International Student Assessment (PISA) ICT Literacy and Collaborative Problem Solving (CPS) Skills.

The adapted National Research Council's framework of skills involves:[2]

Cognitive skills

- **Non-routine problem solving** – expert thinking, metacognition, creativity.
- **Systems thinking** – decision making and reasoning.
- **Critical thinking** – definitions of critical thinking are broad and usually involve general cognitive skills such as analysing, synthesising and reasoning skills.
- **ICT literacy** – access, manage, integrate, evaluate, construct and communicate[3].

Interpersonal skills

- **Communication** – active listening, oral communication, written communication, assertive communication and non-verbal communication.
- **Relationship-building skills** – teamwork, trust, intercultural sensitivity, service orientation, self-presentation, social influence, conflict resolution and negotiation.
- **Collaborative problem solving** – establishing and maintaining shared understanding, taking appropriate action, establishing and maintaining team organisation.

[1] OECD – *Better Skills, Better Jobs, Better Lives* (OECD Publishing, 2012)

[2] Koenig J A, National Research Council – *Assessing 21st Century Skills: Summary of a Workshop* (National Academies Press, 2011)

[3] PISA – *The PISA Framework for Assessment of ICT Literacy* (2011)

Intrapersonal skills

- **Adaptability** – ability and willingness to cope with the uncertain, handling work stress, adapting to different personalities, communication styles and cultures, and physical adaptability to various indoor and outdoor work environments.
- **Self-management and self-development** – ability to work remotely in virtual teams, work autonomously, be self-motivating and self-monitoring, willing and able to acquire new information and skills related to work.

Transferable skills enable young people to face the demands of further and higher education, as well as the demands of the workplace, and are important in the teaching and learning of this qualification. We will provide teaching and learning materials, developed with stakeholders, to support our qualifications.

Appendix 2: Level 3 Extended Project qualification

What is the Extended Project?

The Extended Project is a standalone qualification that can be taken alongside GCEs. It supports the development of independent learning skills and helps to prepare students for their next step – whether that be higher education study or employment. The qualification:

- is recognised by higher education for the skills it develops
- is worth half of an Advanced GCE qualification at grades A*–E
- carries UCAS points for university entry.

The Extended Project encourages students to develop skills in the following areas: research, critical thinking, extended writing and project management. Students identify and agree a topic area of their choice (which may or may not be related to a GCE subject they are already studying), guided by their teacher.

Students can choose from one of four topics to produce:

- a dissertation (for example an investigation based on predominately secondary research)
- an investigation/field study (for example a practical experiment)
- a performance (for example in music, drama or sport)
- an artefact (for example creating a sculpture in response to a client brief or solving an engineering problem).

The qualification is coursework based and students are assessed on the skills of managing, planning and evaluating their project. Students will research their topic, develop skills to review and evaluate the information, and then present the final outcome of their project.

Students: what they need to do

The Extended Project qualification requires students to:

- select a topic of interest for an in-depth study and negotiate the scope of the project with their teacher
- identify and draft an objective for their project (for example in the form of a question, hypothesis, challenge, outline of proposed performance, issue to be investigated or commission for a client) and provide a rationale for their choice
- produce a plan for how they will deliver their intended objective
- conduct research as required by the project brief, using appropriate techniques
- carry out the project using tools and techniques safely
- share the outcome of the project using appropriate communication methods, including a presentation.

Teachers: key information

- The Extended Project has 120 guided learning hours (GLH) consisting of:
  - a 40-GLH taught element that includes teaching the technical skills (for example research skills)
  - an 80-GLH guided element that includes mentoring students through the project work.
- Group work is acceptable, however it is important that each student provides evidence of their own contribution and produces their own report.
- 100% externally moderated.
- Four Assessment Objectives: manage, use resources, develop and realise, review.
- Can be run over 1, 1½ or 2 years.
- Can be submitted in January or June.

How to link the Extended Project with Psychology

The Extended Project enables students to develop transferable skills for progression to higher education and to the workplace, through the exploration of either an area of personal interest or a topic of interest within the psychology qualification content. Through the study of this psychology qualification, students will develop knowledge and understanding of psychological concepts and issues; apply these concepts and issues to real-world contexts; then analyse and evaluate these concepts and issues.

Skills developed

Through the Extended Project students will develop skills in:

- conducting, organising and using research
- independent reading in the subject area
- planning, project management and time management
- defining a hypothesis to be tested in investigations or developing a design brief
- collecting, handling and interpreting data and evidence
- evaluating arguments and processes, including arguments in favour of alternative interpretations of data and evaluation of experimental methodology
- critical thinking.

In the context of the Extended Project, critical thinking refers to the ability to identify and develop arguments for a point of view or hypothesis and to consider and respond to alternative arguments. This supports the development of evaluative skills, through evaluating psychological theories and concepts, and using qualitative and quantitative evidence to support informed judgements relating to psychological issues and debates.

The Extended Project is an ideal vehicle to develop the transferrable skills identified in *Appendix 1*.

Types of Extended Project

Students may choose a university-style dissertation on any topic which can be researched and argued, for example:

- reductionism in psychology
- using psychology for social control
- the nature-nurture debate.

For their dissertation students should use secondary research sources to provide a reasoned defence or a point of view, with consideration of counter arguments.

An alternative might be an investigative project or field study involving the collection of data, for example:

- an experiment to look at acoustic similarity of words and the effect on short-term memory
- an experiment which tests reaction time related to another measure of speed of thinking.

Using the Extended Project to support breadth and depth

There is no specified material that students are expected to study and, in the Extended Project, students are assessed on the quality of the work they produce and the skills they develop and demonstrate through completing this work. Students can use the Extended Project to demonstrate *extension* in one or more dimensions:

- ***deepening understanding***: where a student explores a topic in greater depth than in the specification content
- ***broadening skills***: where a student learns a new skill. This might be learning how to design a website or learning a new statistical technique that can be used in the analysis of either primary or secondary data collected by the student
- ***widening perspectives***: where the student's project spans different subjects. A student studying psychology with other sciences may wish to research the development of psychology from a new to an established scientific field. A student studying psychology with mathematics may wish to use statistical techniques to perform a comparative analysis of data from follow-up studies. A student studying psychology with economics may wish to conduct an experiment that investigates psychological reasons for economic behaviour.

A wide range of information to support the delivery and assessment of the Extended Project, including the specification, teacher guidance for all aspects, editable schemes of work and exemplars for all four topics, can be found on our website: www.edexcel.com/project

Appendix 3: Mathematical skills

This appendix is taken from the document *GCE AS and A level regulatory requirements for biology, chemistry, physics and psychology*, published by the Department of Education in April 2014.

Throughout the course of study, students will develop competence in the mathematical skills listed below. There are opportunities for students to develop these skills throughout the content and they are required to apply the skills to relevant psychological contexts.

The assessment of mathematical skills will include at least Level 2 mathematical skills as a minimum of 10% of the overall marks for this qualification.

Mathematical skills		**Exemplification of mathematical skill in the context of GCE Psychology (assessment is not limited to the examples given below)**
D.0 – Arithmetic and numerical computation		
D.0.1	Recognise and use expressions in decimal and standard form	For example converting data in standard form from a results table into decimal form in order to construct a pie chart.
D.0.2	Use ratios, fractions and percentages	For example calculating the percentages of cases that fall into different categories in an observation study.
D.0.3	Estimate results	For example commenting on the spread of scores for a set of data, which would require estimating the range.
D.1 – Handling data		
D.1.1	Use an appropriate number of significant figures	For example expressing a correlation coefficient to two or three significant figures.
D.1.2	Find arithmetic means	For example calculating the means for two conditions using raw data from a class experiment.
D.1.3	Construct and interpret frequency tables and diagrams, bar charts and histograms	For example selecting and sketching an appropriate form of data display for a given set of data.
D.1.4	Understand simple probability	For example explaining the difference between the 0.05 and 0.01 levels of significance.
D.1.5	Understand the principles of sampling as applied to scientific data	For example explaining how a random or stratified sample could be obtained from a target population.

Mathematical skills		Exemplification of mathematical skill in the context of GCE Psychology (assessment is not limited to the examples given below)
D.1 – Handling data (continued)		
D.1.6	Understand the terms mean, median and mode	For example explaining the differences between the mean, median and mode and selecting which measure of central tendency is most appropriate for a given set of data. Calculating standard deviation.
D.1.7	Use a scatter diagram to identify a correlation between two variables	For example plotting two variables from an investigation on a scatter diagram and identifying the pattern as a positive correlation, a negative correlation or no correlation.
D.1.8	Use a statistical test	For example calculating a non-parametric test of differences using data from a given experiment.
D.1.9	Make order of magnitude calculations	For example estimating the mean test score for a large number of participants on the basis of the total overall score.
D.1.11	Know the characteristics of normal and skewed distributions	For example being presented with a set of scores from an experiment and being asked to indicate the position of the mean (or median, or mode).
D.1.14	Understand measures of dispersion, including standard deviation and range	For example explaining why the standard deviation might be a more useful measure of dispersion for a given set of scores e.g. where there is an outlying score.
D.1.15	Understand the differences between qualitative and quantitative data	For example explaining how a given qualitative measure (such as an interview transcript) might be converted into quantitative data.
D.1.16	Understand the difference between primary and secondary data	For example stating whether data collected by a researcher dealing directly with participants is primary or secondary data.
D.2 – Algebra		
D.2.1	Understand and use the symbols: =, <, <<, >>, >, $\propto$, ~.	For example expressing the outcome of an inferential test in the conventional form by stating the level of significance at the 0.05 level or 0.01 level by using symbols appropriately.

Mathematical skills		Exemplification of mathematical skill in the context of GCE Psychology (assessment is not limited to the examples given below)
D.3 – Graphs		
D.3.1	Translate information between graphical, numerical and algebraic forms	For example using a set of numerical data (a set of scores) from a record sheet to construct a bar graph.
D.3.2	Plot two variables from experimental or other data	For example sketching a scatter diagram using two sets of data from a correlational investigation.

Appendix 4: Formulae and statistical tables

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1-\frac{6\sum d^2}{n\left(n^2-1\right)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Chi squared distribution formula

$$X^2 = \sum \frac{(o-e)^2}{e} \qquad df = (r-1)(c-1)$$

Critical values for chi squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Mann-Whitney U test formulae

$$U_a = n_a n_b + \frac{n_a\left(n_a+1\right)}{2} - \sum R_a$$

$$U_b = n_a n_b + \frac{n_b\left(n_b+1\right)}{2} - \sum R_b$$

(U is the smaller of U_a and U_b)

Critical values for the Mann-Whitney U test

	N_b															
	5	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
N_a																
***p* ≤ 0.05 (one-tailed), *p* ≤ 0.10 (two-tailed)**																
5	4	5	6	8	9	11	12	13	15	16	18	19	20	22	23	25
6	5	7	8	10	12	14	16	17	19	21	23	25	26	28	30	32
7	6	8	11	13	15	17	19	21	24	26	28	30	33	35	37	39
8	8	10	13	15	18	20	23	26	28	31	33	36	39	41	44	47
9	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54
10	11	14	17	20	24	27	31	34	37	41	44	48	51	55	58	62
11	12	16	19	23	27	31	34	38	42	46	50	54	57	61	65	69
12	13	17	21	26	30	34	38	42	47	51	55	60	64	68	72	77
13	15	19	24	28	33	37	42	47	51	56	61	65	70	75	80	84
14	16	21	26	31	36	41	46	51	56	61	66	71	77	82	87	92
15	18	23	28	33	39	44	50	55	61	66	72	77	83	88	94	100
16	19	25	30	36	42	48	54	60	65	71	77	83	89	95	101	107
17	20	26	33	39	45	51	57	64	70	77	83	89	96	102	109	115
18	22	28	35	41	48	55	61	68	75	82	88	95	102	109	116	123
19	23	30	37	44	51	58	65	72	80	87	94	101	109	116	123	130
20	25	32	39	47	54	62	69	77	84	92	100	107	115	123	130	138

	N_b															
	5	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
N_a																
***p* ≤ 0.01 (one-tailed), *p* ≤ 0.02 (two-tailed)**																
5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
6	2	3	4	6	7	8	9	11	12	13	15	16	18	19	20	22
7	3	4	6	7	9	11	12	14	16	17	19	21	23	24	26	28
8	4	6	7	9	11	13	15	17	20	22	24	26	28	30	32	34
9	5	7	9	11	14	16	18	21	23	26	28	31	33	36	38	40
10	6	8	11	13	16	19	22	24	27	30	33	36	38	41	44	47
11	7	9	12	15	18	22	25	28	31	34	37	41	44	47	50	53
12	8	11	14	17	21	24	28	31	35	38	42	46	49	53	56	60
13	9	12	16	20	23	27	31	35	39	43	47	51	55	59	63	67
14	10	13	17	22	26	30	34	38	43	47	51	56	60	65	69	73
15	11	15	19	24	28	33	37	42	47	51	56	61	66	70	75	80
16	12	16	21	26	31	36	41	46	51	56	61	66	71	76	82	87
17	13	18	23	28	33	38	44	49	55	60	66	71	77	82	88	93
18	14	19	24	30	36	41	47	53	59	65	70	76	82	88	94	100
19	15	20	26	32	38	44	50	56	63	69	75	82	88	94	101	107
20	16	22	28	34	40	47	53	60	67	73	80	87	93	100	107	114

N_a \ N_b	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**
***p* ≤ 0.025 (one-tailed), *p* ≤ 0.05 (two-tailed)**																
5	2	3	5	6	7	8	9	11	12	13	14	15	17	18	19	20
6	3	5	6	8	10	11	13	14	16	17	19	21	22	24	25	27
7	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34
8	6	8	10	13	15	17	19	22	24	26	29	31	34	36	38	41
9	7	10	12	15	17	20	23	26	28	31	34	37	39	42	45	48
10	8	11	14	17	20	23	26	29	33	36	39	42	45	48	52	55
11	9	13	16	19	23	26	30	33	37	40	44	47	51	55	58	62
12	11	14	18	22	26	29	33	37	41	45	49	53	57	61	65	69
13	12	16	20	24	28	33	37	41	45	50	54	59	63	67	72	76
14	13	17	22	26	31	36	40	45	50	55	59	64	67	74	78	83
15	14	19	24	29	34	39	44	49	54	59	64	70	75	80	85	90
16	15	21	26	31	37	42	47	53	59	64	70	75	81	86	92	98
17	17	22	28	34	39	45	51	57	63	67	75	81	87	93	99	105
18	18	24	30	36	42	48	55	61	67	74	80	86	93	99	106	112
19	19	25	32	38	45	52	58	65	72	78	85	92	99	106	113	119
20	20	27	34	41	48	55	62	69	76	83	90	98	105	112	119	127

N_a \ N_b	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
***p* ≤ 0.005 (one-tailed), *p* ≤ 0.01 (two-tailed)**																
5	0	1	1	2	3	4	5	6	7	7	8	9	10	11	12	13
6	1	2	3	4	5	6	7	9	10	11	12	13	15	16	17	18
7	1	3	4	6	7	9	10	12	13	15	16	18	19	21	22	24
8	2	4	6	7	9	11	13	15	17	18	20	22	24	26	28	30
9	3	5	7	9	11	13	16	18	20	22	24	27	29	31	33	36
10	4	6	9	11	13	16	18	21	24	26	29	31	34	37	39	42
11	5	7	10	13	16	18	21	24	27	30	33	36	39	42	45	48
12	6	9	12	15	18	21	24	27	31	34	37	41	44	47	51	54
13	7	10	13	17	20	24	27	31	34	38	42	45	49	53	56	60
14	7	11	15	18	22	26	30	34	38	42	46	50	54	58	63	67
15	8	12	16	20	24	29	33	37	42	46	51	55	60	64	69	73
16	9	13	18	22	27	31	36	41	45	50	55	60	65	70	74	79
17	10	15	19	24	29	34	39	44	49	54	60	65	70	75	81	86
18	11	16	21	26	31	37	42	47	53	58	64	70	75	81	87	92
19	12	17	22	28	33	39	45	51	56	63	69	74	81	87	93	99
20	13	18	24	30	36	42	48	54	60	67	73	79	86	92	99	105

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)

N is the number of scores left, ignore those with 0 difference.

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
n	**Level of significance for a two-tailed test**		
	0.1	0.05	0.02
N=5	0	-	-
6	2	0	-
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

Appendix 5: Codes

Type of code	Use of code	Code number
Discount codes	Every qualification eligible for performance tables is assigned a discount code indicating the subject area to which it belongs. Discount codes are published by DfE in the RAISEonline library (www.raiseonline.org)	For KS4 performance tables: PK1 For 16–18 performance tables: 4850
Regulated Qualifications Framework (RQF) codes	Each qualification title is allocated an Ofqual Regulated Qualifications Framework (RQF) code. The RQF code is known as a Qualification Number (QN). This is the code that features in the DfE Section 96 and on the LARA as being eligible for 16–18 and 19+ funding, and is to be used for all qualification funding purposes. The QN will appear on students' final certification documentation.	The QN for the qualification in this publication is: 601/5572/3
Subject codes	The subject code is used by centres to enter students for a qualification. Centres will need to use the entry codes only when claiming students' qualifications.	GCE – 8PS0
Paper code	These codes are provided for reference purposes. Students do not need to be entered for individual papers.	Paper 1: 8PS0/01 Paper 2: 8PS0/02

Appendix 6: Taxonomy (command words)

The following command words in this taxonomy will be used consistently by Pearson in its assessments to ensure students are rewarded for demonstrating the necessary skills. Careful consideration has been given to the taxonomies associated to particular question types, to ensure that Assessment Objectives are targeted consistently across questions.

Please note: the list below will not necessarily be used in every paper/session and is provided for guidance only.

One of the key changes is that a single command word will be used per item; dual injunctions, for example describe and evaluate, will no longer be used.

Command Word	Definition/meaning
Analyse	Break something down into its components/parts. Examine each part methodically and in detail in order to discover the meaning or essential features of a theme, topic or situation. Explore the relationship between the features and how each one contributes to the topic.
Assess	Give careful consideration to all the factors or events that apply and identify which are the most important or relevant. Make a judgement on the importance of something and come to a conclusion where needed.
Calculate	Obtain a numerical answer, showing relevant working. If the answer has a unit, this must be included.
Compare	Looking for the similarities **and** differences of two (or more) things. This should not require the drawing of a conclusion. The answer must relate to both (or all) things mentioned in the question. The answer must include at least one similarity and one difference.
Complete	To fill in/write all the details asked for.
Convert	Express a quantity in alternative units.
Define	Provide a definition of something.
Describe	To give an account of something. Statements in the response need to be developed as they are often linked but do not need to include a justification or reason.
Determine	The answer must have an element that is quantitative from the stimulus provided, or must show how the answer can be reached quantitatively. To gain maximum marks there must be a quantitative element to the answer.
Discuss	Explore the issue/situation/problem/argument that is being presented within the question, articulating different or contrasting viewpoints.
Draw	Produce an output, either by freehand or using a ruler (e.g. graph).

Command Word	Definition/meaning
Evaluate	Review information then bring it together to form a conclusion, drawing on evidence, including strengths, weaknesses, alternative actions, relevant data or information. Come to a supported judgement of a subject's qualities and relation to its context.
Explain	An explanation that requires a justification/exemplification of a point. The answer must contain some element of reasoning/justification, this can include mathematical explanations.
Give	Generally involves the recall of one or more pieces of information; when used in relation to a context it is used to determine a candidate's grasp of the factual information presented.
Identify	This requires some key information to be selected from a given stimulus/resource.
Interpret	Recognise a trend or pattern(s) within a given stimulus/resource.
Justify	Rationalise a decision or action.
Name	Synonymous with 'Give'.
Plot	Produce, or add detail to, a graph/chart by marking points accurately (e.g. line of best fit).
Predict	Articulate an expected result.
State	Synonymous with 'Give'.
Suggest	Make a proposal/propose an idea in written form.
To what extent	Review information then bring it together to form a judgement conclusion, following the provision of a balanced and reasoned argument.

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