

INTERNATIONAL ADVANCED LEVEL

PSYCHOLOGY

SPECIFICATION

Pearson Edexcel International Advanced Subsidiary in Psychology (XPS01)

Pearson Edexcel International Advanced Level in Psychology (YPS01)

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Issue 5



Edexcel, BTEC and LCCI qualifications

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Acknowledgements

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Summary of Pearson Edexcel International Advanced Subsidiary/Advanced Level in Psychology specification Issue 5 changes

Summary of changes made between previous issue and this current issue	Page number
The qualification is no longer available for assessment in the October session. This series has thus been removed from assessment availability.	4, 7-10, 50

Earlier issues show previous changes.

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

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About this specification

The Pearson Edexcel International Advanced Subsidiary in Psychology and the Pearson Edexcel International Advanced Level in Psychology are part of a suite of International Advanced Level qualifications offered by Pearson.

These qualifications are not accredited or regulated by any UK regulatory body.

Key features

This specification includes the following key features:

Structure

The Pearson Edexcel International Advanced Subsidiary in Psychology and the Pearson Edexcel International Advanced Level in Psychology are modular qualifications. The Advanced Subsidiary can be claimed on completion of the International Advanced Subsidiary (IAS) units.

The International Advanced Level can be claimed on completion of all the units (IAS and IA2 units).

Content

The content is relevant, engaging, updated from the content of legacy qualifications. It uses a combination of classic and contemporary studies.

Assessment

Written examinations with short-answer and extended-open response questions.

Approach

These qualifications enable students to develop independent learning and critical thinking skills by incorporating synoptic assessment at International A2.

Specification updates

This specification is Issue 5 and is valid for first teaching from September 2015. If there are any significant changes to the specification, we will inform centres in writing. Changes will also be posted on our website.

For more information please visit qualifications.pearson.com.

Using this specification

This specification has been designed to give guidance to teachers and encourage effective delivery of these qualifications. The following information will help you get the most out of the content and guidance.

Compulsory content: as a minimum, all the bullet points in the content must be taught. The word 'including' in content specifies the detail of what must be covered.

Examples: throughout the content, we have included examples of what could be covered or what might support teaching and learning. It is important to note that examples are for illustrative purposes only and centres can use other examples. We have included examples that are easily understood and recognised by international centres.

Assessments: use a range of material and are not limited to the examples given. Teachers should deliver these qualifications using a good range of examples to support the assessment of the content.

Depth and breadth of content: teachers should use the full range of content and all the assessment objectives given in the subject content section.

Qualification aims and objectives

The aims and objectives of these qualifications are to enable students to:

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

Qualification abbreviations used in this specification

The following abbreviations appear in this specification:

International Advanced Subsidiary – IAS

International A2 – IA2 (the additional content required for an IAL)

International Advanced Level – IAL.

Why choose Pearson Edexcel qualifications?

Pearson – the world’s largest education company

Edexcel academic qualifications are from Pearson, the UK’s largest awarding organisation. With over 3.4 million students studying our academic and vocational qualifications worldwide, we offer internationally recognised qualifications to schools, colleges and employers globally.

Pearson is recognised as the world’s largest education company, allowing us to drive innovation and provide comprehensive support for Pearson Edexcel students in acquiring the knowledge and skills they need for progression in study, work and life.

A heritage you can trust

The background to Pearson becoming the UK’s largest awarding organisation began in 1836, when a royal charter gave the University of London its first powers to conduct exams and confer degrees on its students. With over 150 years of international education experience, Edexcel qualifications have a firm academic foundation, built on the traditions and rigour associated with Britain’s educational system.

Results you can trust

Pearson’s leading online marking technology has been shown to produce exceptionally reliable results, demonstrating that at every stage, Pearson Edexcel qualifications maintain the highest standards.

Developed to Pearson’s world-class qualifications standards

Pearson’s world-class standards mean that all Pearson Edexcel qualifications are developed to be rigorous, demanding, inclusive and empowering. We work collaboratively with a panel of educational thought-leaders and assessment experts to ensure that Pearson Edexcel qualifications are globally relevant, represent world-class best practice and maintain a consistent standard.

For more information on the world-class qualification process and principles please go to *Appendix 2: Pearson World Class Qualification design principles* or visit our website: uk.pearson.com/world-class-qualifications.

Why choose Pearson Edexcel International Advanced Subsidiary/Advanced Level qualifications in Psychology?

We have listened to feedback from all parts of the international school subject community, including a large number of teachers, higher education institutions and Psychology professional bodies. We have made changes that will engage international learners and give them skills that will support their progression to further study of Psychology and to a wide range of other subjects.

Key qualification features

Structure: Two-unit (IAS) or four-unit (IAL) modular qualifications. The IAS is nested in the IAL and IAS results contribute to IAL overall grade. These qualifications provide a secure foundation for further study and also provides a worthwhile course for students who will end their study at the International Advanced Subsidiary or International Advanced Level stage.

Content: Up to date, engaging and relevant to international audience using a broad base of both famous, traditional and contemporary studies. Students will develop research methods and carry out practical work by using various techniques in appropriate topics. They will learn to apply psychological theory to everyday behaviour and to appreciate the variety of people's characteristics. In addition, they will learn how to analyse aspects of their own behaviour in different circumstances. There is also a 10% mathematical content and students are allowed to use a calculator in examinations.

Assessment: 100% external assessment, with January and June assessment opportunities.

Clear and straightforward question papers: Our question papers are clear and accessible for students of all ability ranges. Our mark schemes are straightforward so that the assessment requirements are clear.

Broad and deep development of learners' transferable skills: We designed the International Advanced Level qualifications to extend learners' knowledge by broadening and deepening skills, for example students will develop:

- **Critical thinking skills:** a critical perspective on psychology by analysing the way psychological theory and research can be critically evaluated.
- **Self monitoring:** ability to work autonomously, be self-motivating and self-monitoring, reflecting on psychological learning and drawing on their ability to apply concepts coherently and with reasoned logic.
- **Interpersonal skills:** provide opportunities for students to engage with others to discuss and debate psychological explanations of human behaviour and the issues surrounding the use of psychology within society.

Progression: International Advanced Level qualifications enable successful progression to undergraduate studies, further education or employment. Through our world-class qualification development process we consulted with higher education, Psychology teachers and Psychology professional bodies to validate the appropriateness of these qualifications, including content, skills and the assessment structure.

Our Psychology qualifications sit within our wider subject offer for IAL Science. More information can be found on our website (qualifications.pearson.com) on the Pearson Edexcel International Advanced Level pages.

Supporting you in planning and implementing these qualifications

Planning

- Our *Getting Started Guide* gives you an overview of the Pearson Edexcel International Advanced Subsidiary/Advanced Level in Psychology qualifications to help you understand the changes to content and assessment, and what these changes mean for you and your students.
- We will provide you with an editable course planner and a scheme of work, which is currently included in the *Getting Started Guide* document.

Teaching and learning

We are providing a number of free teaching and learning materials, including Summary of Studies, Component Guides, and example student scripts with examiner commentaries, to promote any time, any place learning and to indicate the standards required to successfully complete this course.

Preparing for exams

We will also provide a range of resources to help you prepare your students for the assessments, including:

- exemplar candidate scripts to support assessment and indicate standards required at different grade levels in these qualifications
- examiner commentaries following each examination series.

ResultsPlus

ResultsPlus provides the most detailed analysis available of your students' examination performance. It can help you identify the topics and skills where further learning would benefit your students.

examWizard

A free online resource is available, designed to support students and teachers with examination preparation and assessment.

Training events

In addition to online training, we host a series of training events each year for teachers to deepen their understanding of our qualifications.

Subject Advisor service Get help and support

Our subject advisor service will ensure that you receive help and guidance from us.

You can sign up to receive Pearson Edexcel newsletter for qualification updates and product and service news.

Qualification at a glance

Qualification overview

Pearson Edexcel International Advanced Subsidiary in Psychology

This qualification consists of two externally examined units.

The International Advanced Subsidiary is the first half of the International Advanced Level qualification and consists of two IAS units, units 1 and 2. This qualification may be awarded as a discrete qualification or may contribute 50 percent towards the International Advanced Level qualification.

Pearson Edexcel International Advanced Level in Psychology

This qualification consists of four externally examined units.

The International Advanced Level consists of the two IAS units (units 1 and 2) plus two IA2 units (units 3 and 4). Candidates wishing to take the International Advanced Level must, therefore, complete all four units.

Course of study

The structure of these qualifications allows teachers to construct a course of study that can be taught and assessed as either:

- distinct modules of teaching and learning with related units of assessment taken at appropriate stages during the course; or
- a linear course assessed in its entirety at the end.

Content and assessment overview

The Pearson Edexcel International Advanced Subsidiary in Psychology consists of four topics.

The Pearson International Advanced Level in Psychology consists of nine topics; however, students have to complete eight of these. Students must complete topics A–E, H–I and either topic F or G.

IAS Unit 1: Social and cognitive psychology	*Unit code: WPS01/01	
Externally assessed Written examination: 1 hour and 30 minutes Availability: January and June First assessment: June 2016 64 marks	40% of the total IAS	20% of the total IAL
Content overview <ul style="list-style-type: none"> • Topic A: Social psychology • Topic B: Cognitive psychology 		
Assessment overview <p>Candidates must answer all questions from three sections.</p> <p>Section A: Social psychology, totals 26 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section B: Cognitive psychology, totals 26 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section C: comprises one 12-mark extended open-response question on either social or cognitive psychology.</p>		

IAS Unit 2: Biological psychology, learning theories and development	*Unit code: WPS02/01	
Externally assessed Written examination: 2 hours Availability: January and June First assessment: June 2016 96 marks	60% of the total IAS	30% of the total IAL
Content overview <ul style="list-style-type: none"> • Topic C: Biological psychology • Topic D: Learning theories and development 		
Assessment overview <p>Candidates must answer all questions from three sections.</p> <p>Section A: Biological psychology, totals 34 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section B: Learning theories and development, totals 34 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section C: comprises one 12-mark and one 16-mark extended open-response question. The 12-mark question covers either biological psychology or learning theories and development and the 16-mark question covers both biological psychology, and learning theories and development.</p>		

IA2 Unit 3: Applications of psychology	*Unit code: WPS03/01	
Externally assessed Written examination: 1 hour and 30 minutes Availability: January and June First assessment: January 2017 64 marks	40% of the total IA2	20% of the total IAL
Content overview <ul style="list-style-type: none"> • Topic E: Developmental psychology Optional topics (students must study one of the following topics): <ul style="list-style-type: none"> • Topic F: Criminological psychology • Topic G: Health psychology 		
Assessment overview <p>Candidates must answer all questions from Section A and all questions from a choice of two topic areas in Section B.</p> <p>Section A: Developmental psychology, totals 32 marks and comprises short-answer questions and two eight-mark extended open-response question. One eight-mark question focuses on developmental psychology and one eight-mark synoptic question is based on developmental psychology and issues from units 1 and 2.</p> <p>Section B: presents candidates with a choice of one from either criminological or health psychology. Each section totals 32 marks and comprises short-answer questions and two eight-mark extended open-response questions.</p>		

IA2 Unit 4: Clinical psychology and psychological skills	*Unit code: WPS04/01	
Externally assessed Written examination: 2 hours Availability: January and June First assessment: June 2017 96 marks	60% of the total IA2	30% of the total IAL
Content overview <ul style="list-style-type: none"> • Topic H: Clinical psychology • Topic I: Psychological skills 		
Assessment overview Candidates must answer all questions from five sections. Section A: Clinical psychology, totals 32 marks and comprises short-answer questions. Section B: Clinical psychology, comprises one 16-mark extended open-response question. Section C: Psychological skills, totals 20 marks and comprises short-answer questions drawing on research methods from other topic areas (except topics F and G). Section D: Psychological skills, comprises one eight-mark extended open-response question based on the analysis of a key question from other topic areas (except topics F and G). Section E: Psychological skills, comprises one 20-mark synoptic question based on issues and debates from other topic areas (except topics F and G).		

*See *Appendix 1: Codes* for a description of this and all other codes relevant to these qualifications.

Calculators

Calculators may be used in the examinations. Please see *Appendix 6: Use of calculators*.

The formulae and statistical tables

The formulae and statistical tables in *Appendix 8: Formulae and statistical tables*, will also be given in each of the papers.

Psychology content

Unit 1: Social and cognitive psychology	12
Unit 2: Biological psychology, learning theories and development	20
Unit 3: Applications of psychology	28
Unit 4: Clinical psychology and psychological skills	37

Unit 1: Social and cognitive psychology

IAS compulsory unit

Externally assessed

1.1 Unit description

Students should know, understand, apply, critically analyse and evaluate the content, including performing procedures and making connections where appropriate.

Topic A: Social psychology

Students must show an 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.

Topic B: Cognitive psychology

Students must show an 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 how information is processed in the brain.

There are opportunities for students to develop mathematical skills throughout the content. Students are required to apply the skills to relevant psychological contexts. Please see *Appendix 7: Mathematical skills*, for further information.

1.2 Assessment information

- First assessment: June 2016.
 - The assessment is 1 hour and 30 minutes.
 - The assessment is out of 64 marks.
 - Candidates must answer all questions from three sections.
 - Section A: Social psychology, totals 26 marks and comprises short-answer questions and one eight-mark extended open-response question.
 - Section B: Cognitive psychology, totals 26 marks and comprises short-answer questions and one eight-mark extended open-response question.
 - Section C: comprises one 12-mark extended open-response question on either social or cognitive psychology.
 - The formulae and statistical tables given in *Appendix 8: Formulae and statistical tables* will also be given in the paper.
 - Calculators may be used in the examination. Please see *Appendix 6: Use of calculators*.
 - Candidates may be required to respond to stimulus material using psychological concepts, theories and/or research from across topic areas.
 - Candidates may be asked to consider issues of validity, reliability, credibility, generalisability, objectivity, and subjectivity in their evaluation of studies and theories.
 - Candidates should be able to define any terms given in the specification.
-

1.3 Topic A: Social psychology

Topic overview

Students must show an 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.

What students need to learn:

1.1 Content

Obedience and majority and minority influence, as forms of social influence on behaviour.

Obedience

- 1.1.1 Theories of obedience, including agency theory and social power theory.
- 1.1.2 Research into obedience, including Milgram's (1963) 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.

Conformity

- 1.1.4 Types and explanations of conformity.
- 1.1.5 Research into conformity including Asch (1951) and his variation studies (1952, 1956).
- 1.1.6 Minority influence (Moscovici, 1976).
- 1.1.7 Factors affecting conformity and minority influence, including individual differences (personality), situation and culture.

1.2 Methods

Self-reporting data

- 1.2.1 Designing and conducting questionnaires and interviews, considering researcher effects.
- 1.2.2 Primary and secondary data.
- 1.2.3 Unstructured, semi-structured and structured interviews, open, closed (including ranked scale) questions.
- 1.2.4 Alternative hypotheses.

Sample selection and sampling techniques

- 1.2.5 Random, stratified, volunteer, and opportunity sampling techniques.

Quantitative data

- 1.2.6 (List A) Analysis of quantitative data: calculating measures of central tendency (mean, median, mode), data tables (frequency tables and summary tables), graphical presentation (bar chart, histogram), measures of dispersion (range and standard deviation), percentages, ratios, fractions.
- 1.2.7 Normal and skewed distribution.
- 1.2.8 Analysis of qualitative data using thematic analysis.

Ethical guidelines

- 1.2.9 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 Moscovici et al. (1969) Influence of a Consistent Minority on the Responses of a Majority in a Color Perception Task.

Contemporary study

- 1.3.2 Burger (2009) Replicating Milgram: Would people still obey today?

One contemporary study from the following two choices:

- 1.3.3 Yi Huang et al. (2014) Conformity to the opinions of other people lasts for no more than 3 days.
- 1.3.4 Haun et al. (2014) Children Conform to the Behavior of Peers; Other Great Apes Stick With What They Know.

1.4 Practical investigation

1.4.1 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 (mean, median, mode as appropriate), measures of dispersion, (including range and standard deviation as appropriate), table and graphical representations (summary table, frequency table, bar graph, histogram as appropriate)
- collect and present an analysis of qualitative data using thematic analysis
- consider strengths and weaknesses of the questionnaire
- write up the procedure, results and discussion section of a report.

Suitable examples

- A questionnaire to see if males perceive themselves to be more obedient than females.
 - A questionnaire into self-reported levels of conformity based on scenarios.
-

1.4 Topic B: Cognitive psychology

Topic overview

Students must show an 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 how information is processed in the brain.

What students need to learn:

2.1 Content

Models of memory

- 2.1.1 The multi-store model of memory (Atkinson and Shiffrin, 1968), including information processing, encoding, storage, retrieval, capacity and duration.
- 2.1.2 The working memory model (Baddeley and Hitch, 1974) including the phonological loop, central executive, visual-spatial sketchpad, episodic buffer.
- 2.1.3 Reconstructive memory (Bartlett, 1932), including schema theory.

2.2 Methods

Experiments and experimental design

- 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, the issues with each and possible controls.
- 2.2.6 Operationalisation of variables, extraneous variables and confounding variables.
- 2.2.7 The use of control groups, 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 List A from Topic A.

2.2.12 (List B) Decision making and interpretation of inferential statistics:

- levels of measurement
- Wilcoxon signed ranks test of difference (also covering Spearman's rank correlation coefficient (formula) and Spearman's rank (critical values table) and Chi-squared distribution once Unit 2 has been covered)
- 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.

2.2.13 Case studies of brain-damaged patients related to research into memory, including the case of Henry Molaison (HM).

2.3 Studies

Classic study

2.3.1 Bartlett (1932) War of the Ghosts.

Contemporary study

2.3.2 Schmolck et al. (2002) Semantic knowledge in patient HM and other patients with bilateral medial and lateral temporal lobe lesions.

One contemporary study from the following two choices:

2.3.3 Darling et al. (2007) Behavioural evidence for separating components within visuo-spatial working memory.

2.3.4 Sacchi et al. (2007) Changing history: doctored photographs affect memory for past public events.

2.4 Practical investigation

2.4.1 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 using a repeated measures design to gather quantitative data and include descriptive statistics as analysis and the Wilcoxon non-parametric test of difference
- make design decisions when planning and conducting their experiment, using a repeated measures design, sampling decisions, operationalisation, control, ethical considerations, hypothesis construction, experimenter effects and demand characteristics and order effects
- 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 Wilcoxon non-parametric test of difference to test significance, 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 phonological and/or visuospatial components of working memory.
 - An experiment to look at acoustic similarity of words and the effect on short-term memory.
-

Unit 2: Biological psychology, learning theories and development

IAS compulsory unit

Externally assessed

2.1 Unit description

Students should know, understand, apply, critically analyse and evaluate the content, including performing procedures and making connections where appropriate.

Topic C: Biological psychology

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

Topic D: Learning theories and development

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

Students must also show an understanding of learning theories as theories of development and psychodynamic ideas and concepts as different explanations for development, as well as focusing on individual differences.

There are opportunities for students to develop mathematical skills throughout the content. Students are required to apply the skills to relevant psychological contexts. Please see *Appendix 7: Mathematical skills*, for further information.

2.2 Assessment information

- First assessment: June 2016.
 - The assessment is 2 hours.
 - The assessment is out of 96 marks.
 - Candidates must answer all questions from three sections.
 - Section A: Biological psychology, totals 34 marks and comprises short-answer questions and one eight-mark extended open-response question.
 - Section B: Learning theories and development, totals 34 marks and comprises short-answer questions and one eight-mark extended open-response question.
 - Section C: comprises one 12-mark and one 16-mark extended open-response question. The 12-mark question covers either biological psychology or learning theories and development and the 16-mark question covers both biological psychology, and learning theories and development.
 - The formulae and statistical tables given in *Appendix 8: Formulae and statistical tables* will also be given in the paper.
 - Calculators may be used in the examination. Please see *Appendix 6: Use of calculators*.
 - Candidates may be required to respond to stimulus material using psychological concepts, theories and/or research from across topic areas.
 - Candidates may be asked to consider issues of validity, reliability, credibility, generalisability, objectivity, and subjectivity in their evaluation of studies and theories.
 - Candidates should be able to define any terms given in the specification.
 - Research methods from Topic A and Topic B may be assessed in the written examination for this unit.
-

2.3 Topic C: Biological psychology

Topic overview

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

What students need to learn:

3.1 Content

Structure and function of brain regions focusing on aggression

- 3.1.1 The role of 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 structure of the brain, different brain areas including the pre-frontal cortex and limbic system and brain functioning as an explanation of aggression as a human behaviour.
- 3.1.3 The role of, and research into hormones and genes in aggression.

Body rhythms

- 3.1.4 The role of internal pacemakers (body clock) and external zeitgebers in the regulation of the circadian sleep-wake cycle.
- 3.1.5 Infradian rhythms including the menstrual cycle and seasonal affective disorder and therapies, including light therapy.
- 3.1.6 Research into the circadian sleep-wake cycle and infradian rhythms.

3.2 Methods

Correlational research

- 3.2.1 The use of the correlational research method in psychology, including co-variables.
- 3.2.2 Types of correlation: positive, negative and including the use of scatter diagrams.
- 3.2.3 Issues surrounding the use of correlations in psychology; issues with cause and effect, other variables.
- 3.2.4 List B from Topic B, focusing on the Spearman rank test.

Scanning techniques

- 3.2.5 Brain-scanning techniques (CAT, PET, and fMRI). The use of brain-scanning techniques to investigate human behaviour, including aggression.

Twin studies

- 3.2.6 The use of twin studies to investigate genetic relatedness and aggression.
- 3.2.7 List A from Topic A.

3.3 Studies

Classic study

- 3.3.1 Raine et al. (1997) Brain abnormalities in murderers indicated by positron emission tomography.

Contemporary study

- 3.3.2 Brendgen et al. (2005) Examining genetic and environmental effects on social aggression: A study of 6-year-old twins.

One contemporary study from the following two choices:

- 3.3.3 McDermott (2008) Monoamine oxidase A gene (MAOA) predicts behavioural aggression following provocation.
- 3.3.4 Hoefelmann et al. (2006) Behaviors associated to sleep among high school students: cross-sectional and prospective analysis.

3.4 Practical investigation

3.4.1 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 to gather quantitative data and include descriptive statistics as analysis and a non-parametric test of relationship into aggression or body rhythms
- make design decisions when planning and gathering data for a correlational analysis, including co-variables, operationalisation, ethical considerations, hypothesis construction and controls
- collect, present and comment on data gathered, including descriptive statistics and graphical representation (scatter graph)
- use inferential statistical testing (Spearman's rank test) and explain the significance of the result and the use of levels of significance. Students must also be able to use a correlation co-efficient (strength/direction) to explain the relationship
- consider strengths and weaknesses of the correlation and possible design improvements
- write up the procedure, results and discussion section of a report.

Suitable examples

- A correlation into age/amount of time spent on social media and sleep.
 - A correlation to see if there is a relationship between height and a self-rating of aggressive tendencies.
-

2.4 Topic D: Learning theories and development

Topic overview

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

Students must also show an understanding of learning theories as theories of development and psychodynamic ideas and concepts as different explanations for development, as well as focusing on individual differences.

What students need to learn:

4.1 Content

Classical conditioning

4.1.1 The main features of classical conditioning (Pavlovian), including unconditioned stimulus (UCS); unconditioned response (UCR); conditioned stimulus (CS); neutral stimulus (NS); conditioned response (CR); extinction, spontaneous recovery and stimulus generalisation and distribution.

Operant conditioning

4.1.2 The main features of operant conditioning, including types of reinforcement (positive and negative) and punishment (positive and negative) and properties of reinforcement (primary, secondary and schedules) including researching Skinner (1948) Superstition in the pigeon.

Social learning theory

4.1.3 The main features of social learning theory, including observation, imitation, modelling and vicarious reinforcement, attention, retention, motivation and reproduction.

Freud's psychosexual stages of development

4.1.4 Freud's psychosexual stages (oral, anal, phallic, latent and genital) and the role of the unconscious in the development of personality.

Therapies/treatments

4.1.5 Systematic desensitisation.

4.1.6 Psychoanalysis, including free association and dream analysis, transference and counter transference, and the object relations school of thought.

4.2 Methods

Observations

- 4.2.1 The use of the observational research method in psychology, including the gathering of both qualitative and quantitative data (including tallying, event and time sampling).
- 4.2.2 Types of observation: participant, non-participant, structured, naturalistic, overt and covert.

Content analysis

- 4.2.3 Use of content analysis as a research method.

Case studies

- 4.2.4 Freud's use of the case study as a research method.

Quantitative data and qualitative data

- 4.2.5 List A from Topic A.
- 4.2.6 Analysis of qualitative data using thematic analysis.
- 4.2.7 List B from Topic B, focusing on the chi-squared test.
- 4.2.8 Animal research and ethics:
- 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 the Scientific Procedures Act (1986) and Home Office Regulations.

4.3 Studies

Classic study

- 4.3.1 Watson and Rayner (1920) Little Albert: Conditioned emotional reactions.

Contemporary

- 4.3.2 Capafóns et al. (1998) Systematic desensitisation in the treatment of the fear of flying.

One contemporary study from the following two choices:

- 4.3.3 Prot (2014) Long-Term Relations Among Prosocial-Media Use, Empathy, and Prosocial Behavior.
- 4.3.4 Bastian et al. (2011) Cyber-dehumanization: Violent video game play diminishes our humanity.

4.4 Practical investigation

4.4.1 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:

- design and conduct two observations (or one that gathers both qualitative and quantitative data) and include descriptive statistics as analysis, qualitative analysis using themes and a chi-squared statistical test on an aspect of learned behaviour
- make design decisions when planning and conducting the observation(s), including the use of behavioural categories, coding sheets and tallying, control, hypothesis construction, ethics and observer bias/effects
- collect and present and comment on data gathered, including descriptive statistics; percentages, frequencies (as appropriate), graphical representation (bar chart, histogram as appropriate)
- use a chi-squared statistical test and explain the significance of the result
- conduct a thematic analysis on the qualitative data gathered and describe the findings
- consider the strengths and weaknesses of the observation(s) and possible design improvements
- write up the procedure, results and discussion section of a report.

Suitable examples

- How age and sex affect driving speed.
 - Investigating the differences in helpful or polite behaviour in men and women.
-

Unit 3: Applications of psychology

IA2 compulsory unit

Externally assessed

3.1 Unit description

Students should know, understand, apply, critically analyse and evaluate the content, including performing procedures and making connections where appropriate.

Students must study Topic E and choose either Topic F or Topic G.

Topic E: Developmental psychology

Students must show an understanding that developmental psychology is about the development of the individual from before birth to adolescence and beyond, in that what we experience as children affects us including our later development.

Topic F: Criminological psychology

Students must show an understanding that criminological psychology is about the definition and causes of crime and anti-social behaviour, issues around identification of offenders, and treatment of offenders.

Topic G: Health psychology

Students must show an understanding that health psychology is about understanding health from a biological, cognitive and social basis, focusing on stress, and that health psychology is about promoting good health.

There are opportunities for students to develop mathematical skills throughout the content. Students are required to apply the skills to relevant psychological contexts. Please see *Appendix 7: Mathematical skills*, for further information.

3.2 Assessment information

- First assessment: January 2017.
 - The assessment is 1 hour and 30 minutes.
 - The assessment is out of 64 marks.
 - Candidates must answer all questions from Section A and all questions from a choice of two topic areas in Section B.
 - Section A: Developmental psychology, totals 32 marks and comprises short-answer questions and two eight-mark extended open-response questions. One eight-mark question focuses on developmental psychology and the other is an eight-mark synoptic question based on developmental psychology and issues from units 1 and 2.
 - Section B: presents candidates with a choice of one from either criminological or health psychology. Each section totals 32 marks and comprises short-answer questions and two eight-mark extended open-response questions.
 - The formulae and statistical tables given in *Appendix 8: Formulae and statistical tables* will also be given in the paper.
 - Calculators may be used in the examination. Please see *Appendix 6: Use of calculators*.
 - Candidates may be required to respond to stimulus material using psychological concepts, theories and/or research from across topic areas.
 - Candidates may be asked to consider issues of validity, reliability, credibility, generalisability, objectivity, and subjectivity in their evaluation of studies and theories.
 - Candidates should be able to define any terms given in the specification.
 - Research methods from units 1 and 2 may be assessed in the written examination for this unit.
-

3.3 Topic E: Developmental psychology

Topic overview Students must show an understanding that developmental psychology is about the development of the individual from before birth to adolescence and beyond, in that what we experience as children affects us including our later development.

What students need to learn:

5.1 Content

Attachment, deprivation and privation

5.1.1 Theories of attachment:

- learning theories including O'Connor et al.'s (2013) study on social learning, parenting and attachment
- Bowlby's maternal deprivation hypothesis and theory of attachment, including the 44 Juvenile Thieves study (1944).

5.1.2 Ainsworth's work on attachment including types of attachment and care giver sensitivity:

- cross-cultural research into attachment types
- Strange Situation procedure.

Cognitive and language development

5.1.3 Theories of cognitive development:

- Piaget's stages of cognitive and language development
- Vygotsky's zone of proximal development (ZPD)
- stages of language development
- theories of language: learning including Skinner; nativist including Chomsky's language acquisition device (LAD); interactionist including Vygotsky.

Social and emotional development

5.1.4 Theories of social and emotional development:

- Erikson's stages of psychosocial development
- Vygotsky's theory of social development
- mindfulness enhancing social, emotional and cognitive development.

5.2 Studies

Classic study

- 5.2.1 Van IJzendoorn and Kroonenberg (1988) Cross-cultural patterns of attachment: A Meta-Analysis of the Strange Situation.

Contemporary study

- 5.2.2 Cassibba et al. (2013) Attachment the Italian way (Italy).

One contemporary study from the following two choices:

- 5.2.3 Ashdown and Bernard (2012) Can explicit instruction in social and emotional learning skills benefit the social and emotional development, well-being and academic achievement of young children?
- 5.2.4 Ding et al. (2014) The relation of early infant attachment to attachment and cognitive development outcomes in early childhood.

5.3 Methods

- 5.3.1 The use of methods in psychology when carrying out research in developmental psychology:
- methods from units 1 and 2 as appropriate, related to developmental psychology
 - clinical interviewing in developmental psychology to understand the world of the child
 - ethnographic field work including Punch in Bolivia (2002) related to developmental psychology and longitudinal/cross-sectional research in developmental psychology.
- 5.3.2 Cross-cultural research:
- the use of the cross-cultural research method, including the Strange Situation, in developmental psychology, including nature-nurture issues
 - the use of meta-analysis using cross-cultural research to draw conclusions about the universality of attachment types.
- 5.3.3 Ethics and the UNCRC (1989):
- participation versus protection rights and research
 - getting data from children
 - ethical issues when children are the participants.
- 5.3.4 Decision making and interpretation of data:
- List A from Topic A as appropriate
 - List B from Topic B as appropriate.
- 5.3.5 Evaluation of research in developmental psychology:
- issues of reliability, validity, generalisability, credibility, objectivity, subjectivity, ethics and practical application of findings as appropriate.

5.4 Issues

- 5.4.1 The extent to which psychological research in developmental psychology is scientific, drawing on material from units 1 and 2.
 - 5.4.2 The strength and weaknesses of psychological research in developmental psychology, drawing on material from units 1 and 2.
 - 5.4.3 Ethical issues in psychological research as an issue in developmental psychology and drawing on material from units 1 and 2.
-

3.4 Topic F: Criminological psychology

Topic overview

Students must show an understanding that criminological psychology is about the definition and causes of crime and anti-social behaviour, issues around identification of offenders, and treatment of offenders.

What students need to learn:

6.1 Content

Explanations for crime and anti-social behaviour

6.1.1 Social and personality explanations for crime and anti-social behaviour:

- self-fulfilling prophecy
- social learning from the media
- antisocial personality disorder (ASPD).

Understanding the offender

6.1.2 Cognitive interview techniques with witnesses.

6.1.3 The use of psychological (case) formulation to understand the function of offending behaviour in the individual.

Factors influencing identification of offenders

6.1.4 Factors influencing the reliability of eye-witness memory:

- post-event information
- weapons focus
- 'other race' effect
- stress and trauma.

6.1.5 Factors influencing jury decision-making:

- characteristics of the defendant, including attractiveness and race
- pre-trial publicity
- research into expert testimony including Penrod and Cutler (1989) Eyewitness Expert Testimony and Jury Decision Making.

Treatment

6.1.6 Cognitive Behavioural Therapy (CBT) as a therapy for offenders:

- using CBT as a therapy for offenders
- effectiveness of CBT as a therapy for offenders.

6.2 Studies

Classic study

- 6.2.1 Loftus and Palmer (1974) Reconstruction of auto mobile destruction: An example of the interaction between language and memory.

Contemporary study

- 6.2.2 Bradbury M D and Williams M R (2013) Diversity and Citizen Participation: The Effects of Race on Juror Decision Making.

One contemporary study from the following two choices:

- 6.2.3 Ruva, McEvoy and Bryant (2007) Effects of pre-trial publicity and jury deliberation on jury bias and source memory errors.
- 6.2.4 Valentine T and Mesout J (2009) Eyewitness identification under stress in the London Dungeon.

6.3 Methods

- 6.3.1 The use of methods in psychology when carrying out research in criminological psychology:

- methods from units 1 and 2 as appropriate, related to criminological psychology
- experiments as used in the study of eye witness memory
- mock jury research as a method for studying jury decision-making.

- 6.3.2 Ethical guidelines:

- British Psychological Society (BPS) Code of Ethics and Conduct (2009)
- risk management when carrying out research in psychology.

- 6.3.3 Decision making and interpretation of data:

- List A from Topic A as appropriate
- List B from Topic B as appropriate.

- 6.3.4 Evaluation of research in criminological psychology:

- issues of reliability, validity, generalisability, credibility, objectivity, subjectivity, ethics and practical application of findings as appropriate.

3.5 Topic G: Health psychology

Topic overview Students must show an understanding that health psychology is about understanding health from a biological, cognitive and social basis, focusing on stress, and that health psychology is about promoting good health.

What students need to learn:

7.1 Content

Physiology of stress

- 7.1.1 Hypothalamic-Pituitary-Adrenal (HPA) Axis.
- 7.1.2 Cortisol — the stress hormone.
- 7.1.3 Brain regions associated with stress, including hippocampus, amygdala, prefrontal cortex.
- 7.1.4 Selye's General Adaptation Syndrome (GAS), including the alarm reaction.

Factors affecting stress

- 7.1.5 Life events and daily hassles including the Holmes and Rahe stress scale.
- 7.1.6 Individual differences including, personality traits, Type A personality and links to stress.
- 7.1.7 Social support including family, friends and community.

Coping strategies

- 7.1.8 Appraisal-focusing, problem-focusing, emotion-focusing.
- 7.1.9 Positive and negative techniques.

Treatment and therapy for anxiety (biological and psychological)

- 7.1.10 Selective serotonin reuptake inhibitors (SSRIs).
- 7.1.11 Serotonin and norepinephrine reuptake inhibitors (SNRIs).
- 7.1.12 Cognitive Behavioural Therapy (CBT) for anxiety disorders and effectiveness of such treatment.

7.2 Studies

Classic study

7.2.1 Brady (1958) Ulcers in executive monkeys.

Contemporary study

7.2.2 Nakonz and Shik (2009) And all your problems are gone: religious coping strategies among Phillipine migrant workers in Hong Kong.

One contemporary study from the following two choices:

7.2.3 Avdagic et al. (2014) A randomised controlled trial of acceptance and commitment therapy (ACT) and cognitive-behavioural therapy (CBT) for generalised anxiety disorder.

7.2.4 Russell et al. (2015) Adaptation of an adolescence coping assessment for therapeutic recreation and outdoor adventure settings.

7.3 Methods

7.3.1 The use of methods in psychology when carrying out research in health psychology:

- methods from units 1 and 2 as appropriate, related to health psychology
- use of standardised questionnaires, including Adolescent Lifestyle Questionnaire (ALQ) related to health psychology
- use of focus groups.

7.3.2 Use of non-human animals in experiments in psychology practical and ethical issues and the Animals (Scientific Procedures) Act 1986.

7.3.3 Decision making and interpretation of data:

- List A from Topic A as appropriate
- List B from Topic B as appropriate.

7.3.4 Evaluation of research in health psychology:

- issues of reliability, validity, generalisability, credibility, objectivity, subjectivity, ethics and practical application of findings as appropriate.
-

Unit 4: Clinical psychology and psychological skills

IA2 compulsory unit

Externally assessed

4.1 Unit description

Students should know, understand, apply, critically analyse and evaluate the content, including performing procedures and making connections where appropriate.

Topic H: Clinical psychology

Students must show an understanding that clinical psychology is about mental health issues, including issues in diagnosing such issues, features and symptoms, explanations, and treatments and therapies.

Topic I: Psychological skills

This is a synoptic section in which students will be asked to draw on other areas of the qualification in order to understand conceptual and methodological issues. Students will develop an understanding of how to use theories, methodology and evidence from many areas of psychology and apply them to issues.

Relevant psychological skills have been contextualised in topics A–H. This topic collects them together (excluding topics F and G) in order to ensure that all content has been covered.

Students must consider issues and debates from across all topics in order to develop a general knowledge of key issues and debates.

There are opportunities for students to develop mathematical skills throughout the content. Students are required to apply the skills to relevant psychological contexts. Please see *Appendix 7: Mathematical skills*, for further information.

4.2 Assessment information

- First assessment: June 2017.
 - The assessment is 2 hours.
 - The assessment is out of 96 marks.
 - Candidates must answer all questions from five sections.
 - Section A: Clinical psychology, totals 32 marks and comprises short-answer questions.
 - Section B: Clinical psychology, comprises one 16-mark extended open response question.
 - Section C: Psychological skills, totals 20 marks and comprises short-answer questions drawing on research methods from other topic areas (except topics F and G).
 - Section D: Psychological skills, comprises one eight-mark extended open response question based on the analysis of a key question from other topic areas (except topics F and G).
 - Section E: Psychological skills, comprises one 20-mark synoptic question based on issues and debates from other topic areas (except topics F and G).
 - Sections C, D and E assess synopticity. Candidates have to draw on knowledge from other topics.
 - The formulae and statistical tables given in *Appendix 8: Formulae and statistical tables* will also be given in the paper.
 - Calculators may be used in the examination. Please see *Appendix 6: Use of calculators*.
 - Candidates may be required to respond to stimulus material using psychological concepts, theories and/or research from across topic areas.
 - Candidates may be asked to consider issues of validity, reliability, credibility, generalisability, objectivity, and subjectivity in their evaluation of studies and theories.
 - Candidates should be able to define any terms given in the specification.
-

4.3 Topic H: Clinical psychology

Topic overview

Students must show an understanding that clinical psychology is about mental health issues, including issues in diagnosing such issues, features and symptoms, explanations and treatments and therapies.

What students need to learn:

8.1 Content

Definitions and debates in diagnosis

8.1.1 Definitions of abnormality:

- the history of abnormality
- statistical infrequency definition
- failure to function adequately including Rosenhan and Seligman, 1989.

8.1.2 Classification systems:

- ICD (ICD10 and ICD 11 when revised – 2017)
- DSM including DSM IVR and DSM V.

8.1.3 Debates in diagnosis:

- cultural issues in diagnosis
- reliability in diagnosis
- validity in diagnosis.

Mental health disorders, symptoms, features, explanations

8.1.4 Schizophrenia:

- description of symptoms and features, including thought insertion, hallucinations, delusions, disordered thinking
- the function of neurotransmitters as a theory/explanation
- one other biological theory/explanation of schizophrenia.

8.1.5 One other mental health disorder, symptoms, features, explanations selected from unipolar depression OR anorexia nervosa:

- description of symptoms and features
- two different explanations for the disorder (one biological, one non-biological).

Treatment and therapy

8.1.6 Therapy for schizophrenia:

- drug therapy
- family therapy.

8.1.7 Therapy for unipolar depression OR anorexia nervosa:

- drug therapy
- cognitive Behavioural Therapy (CBT).

8.2 Studies

Classic study

8.2.1 Rosenhan (1973) On being sane in insane places.

Contemporary study relating to schizophrenia

8.2.2 Suzuki et al. (2014) High prevalence of underweight and undernutrition in Japanese inpatients with schizophrenia.

One from a choice of two contemporary studies, choosing one that suits the chosen 'other' disorder:

Unipolar depression

8.2.3 Hans and Hiller (2013) Effectiveness of and drop out from outpatient cognitive-behavioural therapy for adult unipolar depression: A meta-analysis of nonrandomised effectiveness studies.

8.2.4 Ma, Quan and Liu (2014) Mediating effect of social support on the relationship between self-evaluation and depression.

Anorexia nervosa

8.2.5 Becker et al. (2002) Eating behaviours and attitudes following prolonged exposure to television among ethnic Fijian adolescent girls.

8.2.6 Reichel et al. (2014) 'Glass fairies' and 'bone children': Adolescents and young adults with anorexia nervosa show positive reactions towards extremely emaciated body pictures measured by the body startle reflex paradigm.

8.3 Methods

- 8.3.1 The use of methods in psychology when carrying out research in clinical psychology:
- methods from units 1 and 2 as appropriate
 - randomised controlled trials (RCTs) related to clinical psychology
 - neuroimaging, including structural and functional brain scanning related to clinical psychology.
- 8.3.2 Conventions of published psychological research: abstract, introduction, aims and hypotheses, method, results, discussion; the process of peer review.
- 8.3.3 Awareness of Health and Care Professions Council (HCPC) guidelines for clinical practitioners.
- 8.3.4 Decision making and interpretation of data:
- List A from Topic A as appropriate
 - List B from Topic B as appropriate.
- 8.3.5 Evaluation of research in clinical psychology:
- issues of reliability, validity, generalisability, credibility, objectivity, subjectivity, ethics and practical application of findings as appropriate.

8.4 Practical Investigation

- 8.4.1 One practical research exercise to gather data relevant to topics covered in clinical psychology - a content analysis that explores attitudes to mental health. This practical research exercise must adhere to ethical principles in both content and intention.

In conducting the practical research exercise, students must:

- perform a content analysis
- analyse at least two sources (such as radio interviews, newspapers, magazines) to compare attitudes towards mental health
- make design decisions when planning and gathering sources for a content analysis, including credibility of secondary data, ethical considerations, controls and reliability
- collect, present and comment on sources gathered
- consider strengths and weaknesses of a content analysis and possible design improvements
- complete the procedure, results and discussion section of a report.

Suitable examples

- Comparing how attitudes to mental health have changed over time.
- How different sources report mental health.

4.4 Topic I: Psychological skills

Topic overview

This is a synoptic section in which students will be asked to draw on other areas of the qualification in order to understand conceptual and methodological issues. Students will develop an understanding of how to use theories, methodology and evidence from many areas of psychology and apply them to issues.

Relevant psychological skills have been contextualised in topics A–H. This topic collects them together (excluding topics F and G) in order to ensure that all content has been covered.

Students must consider issues and debates from across all topics in order to develop a general knowledge of key issues and debates.

What students need to learn:

9.1 Methods

- 9.1.1 Types of data: qualitative and quantitative data; primary and secondary data.
- 9.1.2 Sampling techniques: random, stratified, volunteer and opportunity.
- 9.1.3 Experimental/research designs: independent groups, repeated measures and matched pairs.
- 9.1.4 Hypotheses: null, alternate, experimental; directional and non-directional.
- 9.1.5 Questionnaires and interviews: open, closed (including ranked scale questions); structured, semi-structured and unstructured interviews; self-report data.
- 9.1.6 Experiments: laboratory and field; independent and dependent variables.
- 9.1.7 Observations: tallying, event and time sampling, covert, overt, participant, non-participant, structured observations, naturalistic observations. Gathering both qualitative and quantitative data.
- 9.1.8 Correlation research: type of correlation: positive, negative and use of correlations including issues with cause and effect and other variables.
- 9.1.9 Additional research methods and techniques: twin studies and aggression, animal experiments, case studies as used in different areas of psychology including case studies of brain-damaged patients in relation to memory, brain scanning/neuroimaging (CAT, PET, fMRI), randomised controlled trials (RCTs), content analysis, clinical interviewing, ethnographic fieldwork when getting data with children, longitudinal and cross-sectional research, cross-cultural and meta-analysis.

9.1.10 Control issues: counterbalancing, randomising, order effects, experimenter/researcher effects, social desirability, demand characteristics, participant variables, situational variables, extraneous variables, confounding variables, operationalisation of variables.

9.1.11 Descriptive statistics (List A):

- measures of central tendency (mean, median, mode), frequency tables, summary tables, graphs (bar chart, histogram, scatter diagram), normal distribution, skewed distribution, sense checking data, measures of dispersion (range, standard deviation) and percentages
- produce, handle, interpret data; draw comparisons including the mean of two sets of data.

Students do not need to know formulae but are expected to be competent in mathematical steps.

9.1.12 Inferential statistics (List B):

- levels of measurement, appropriate choice of statistical test; the criteria for and use of the Wilcoxon, Spearman's, chi-squared (for difference) tests; directional and non-directional testing
- use of critical value tables, one- and two-tailed testing.
- levels of significance, including knowledge of standard statistical terminology such as p equal to or greater than ($p \leq .10$ $p \leq .05$ $p \leq .01$); rejecting hypotheses, type I and type II errors, the relationship between significance levels and p values
- observed and critical values.

9.1.13 Methodological issues: validity (internal, predictive, ecological), reliability, generalisability, objectivity, subjectivity, credibility.

9.1.14 Analysis of qualitative data — thematic analysis.

9.1.15 Conventions of published psychological research: abstract, introduction, aims and hypotheses, method, results, discussion, the process of peer review.

9.1.16 Ethical issues in research using humans (BPS Code of Ethics and Conduct, 2009), including risk assessment when carrying out research in psychology. The UNCRC and participation versus protection rights when researching with children and ethical issues when children are the participants. Health and Care Professions Council (HCPC).

9.1.17 Ethical issues in research using animals (Scientific Procedures Act 1986 and Home Office Regulations).

9.2 Key questions in society

9.2.1 Key questions for society using concepts, theories or research from one or more of topics A to H (except topics F and G).

9.3 Issues and debates

9.3.1 Ethical issues in research (animal and human).

9.3.2 Practical issues in the design and implementation of research.

9.3.3 Reductionism versus holism when researching human behaviour.

9.3.4 Ways of explaining behaviour using different approaches, models or theories.

9.3.5 The issue of psychology as a science.

9.3.6 Cultural and gender issues in psychological research.

9.3.7 The role of both nature and nurture in psychology.

9.3.8 An understanding of how psychology has developed over time.

9.3.9 The use of psychology in social control.

9.3.10 The use of psychological knowledge in society.

9.3.11 Issues relating to socially sensitive research.

Assessment information

Assessment requirements

The Pearson Edexcel International Advanced Subsidiary in Psychology consists of two externally examined units.

The Pearson Edexcel International Advanced Level in Psychology consists of four externally examined units.

Please see the *Assessment availability and first award* section for information on when the assessment for each unit will be available from.

Unit	IAS or IA2	Assessment information	Number of raw marks allocated in the unit
Unit 1: Social and cognitive psychology	IAS	<p>Written examination.</p> <p>The assessment is 1 hour and 30 minutes.</p> <p>Candidates must answer all questions from three sections.</p> <p>Section A: Social psychology, totals 26 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section B: Cognitive psychology, totals 26 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section C: comprises one 12-mark extended open-response question on either social or cognitive psychology.</p> <p>The formulae and statistical tables given in <i>Appendix 8: Formulae and statistical tables</i> will also be given in the paper.</p> <p>Calculators may be used in the examination. Please see <i>Appendix 6: Use of calculators</i>.</p>	64 marks

Unit	IAS or IA2	Assessment information	Number of raw marks allocated in the unit
Unit 2: Biological psychology, learning theories and development	IAS	<p>Written examination.</p> <p>The assessment is 2 hours.</p> <p>Candidates must answer all questions from three sections.</p> <p>Section A: Biological psychology totals 34 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section B: Learning theories and development, totals 34 marks and comprises short-answer questions and one eight-mark extended open-response question.</p> <p>Section C: comprises one 12-mark and one 16-mark extended open-response question. The 12-mark question covers either biological psychology or learning theories and development and the 16-mark question covers both biological psychology, and learning theories and development.</p> <p>The formulae and statistical tables given in <i>Appendix 8: Formulae and statistical tables</i> will also be given in the paper.</p> <p>Calculators may be used in the examination. Please see <i>Appendix 6: Use of calculators</i>.</p>	96 marks

Unit	IAS or IA2	Assessment information	Number of raw marks allocated in the unit
Unit 3: Applications of psychology	IA2	<p>Written examination.</p> <p>The assessment is 1 hour and 30 minutes.</p> <p>Candidates must answer all questions from Section A and all questions from a choice of two topic areas in Section B.</p> <p>Section A: Developmental psychology, totals 32 marks and comprises short-answer questions and two eight-mark extended open-response questions. One eight-mark question focuses on developmental psychology and the other is an eight-mark synoptic question based on developmental psychology and issues from units 1 and 2.</p> <p>Section B: presents candidates with a choice of one from either criminological or health psychology, each section totals 32 marks and comprises short-answer questions and two eight-mark extended open-response questions.</p> <p>The formulae and statistical tables given in <i>Appendix 8: Formulae and statistical tables</i> will also be given in the paper.</p> <p>Calculators may be used in the examination. Please see <i>Appendix 6: Use of calculators</i>.</p>	64 marks

Unit	IAS or IA2	Assessment information	Number of raw marks allocated in the unit
Unit 4: Clinical psychology and psychological skills	IA2	<p>Written examination.</p> <p>The assessment is 2 hours.</p> <p>Candidates must answer all questions from five sections.</p> <p>Section A: Clinical psychology, totals 32 marks and comprises short-answer questions.</p> <p>Section B: Clinical psychology, comprises one 16-mark extended open-response question.</p> <p>Section C: Psychological skills, totals 20 marks and comprises short-answer questions drawing on research methods from other topic areas (except topics F and G).</p> <p>Section D: Psychological skills, comprises one eight-mark extended open-response question based on the analysis of a key question from other topic areas (except topics F and G).</p> <p>Section E: Psychological skills, comprises one 20-mark synoptic question based on issues and debates from other topic areas (except topics F and G).</p> <p>The formulae and statistical tables given in <i>Appendix 8: Formulae and statistical tables</i> will also be given in the paper.</p> <p>Calculators may be used in the examination. Please see <i>Appendix 6: Use of calculators</i>.</p>	96 marks

Sample assessment materials

Sample papers and mark schemes can be found in the *Pearson Edexcel International Advanced Subsidiary/Advanced Level in Psychology Sample Assessment Materials (SAMs)* document.

A full list of command words that will be used in the assessments can be found in *Appendix 9: Common word taxonomy*.

Assessment objectives and weightings

		% in IAS	% in IA2	% in IAL
A01	Demonstrate knowledge and understanding of scientific ideas, processes, techniques and procedures.	35-40	30-35	30-35
A02	Apply knowledge and understanding of scientific ideas, processes, techniques and procedures: <ul style="list-style-type: none"> • in a theoretical context • in a practical context • when handling qualitative data • when handling quantitative data. 	30-35	30-35	30-35
A03	Analyse, interpret and evaluate scientific information, ideas and evidence, including in relation to issues, to: <ul style="list-style-type: none"> • make judgements and reach conclusions • develop and refine practical design and procedures. 	30-35	35-40	35-40

Relationship of assessment objectives to units for the International Advanced Subsidiary qualification

Unit number	Assessment Objective		
	A01	A02	A03
Unit 1	14–18%	12–16%	12–16%
Unit 2	20–24%	18–22%	18–22%
Total for International Advanced Subsidiary	35-40%	30-35%	30-35%

NB Totals have been rounded either up or down.

Relationship of assessment objectives to units for the International Advanced Level qualification

Unit number	Assessment Objective		
	A01	A02	A03
Unit 1	7–9%	6–8%	6–8%
Unit 2	10–12%	9–11%	9–11%
Unit 3	6–8%	6–8%	7–9%
Unit 4	8–10%	8–10%	12–14%
Total for International Advanced Level	30-35%	30-35%	35-40%

NB Totals have been rounded either up or down.

Assessment availability and first award

Unit	June 2016	October 2016	January 2017	June 2017	October 2017
1	✓	✓	✓	✓	✓
2	✓	✓	✓	✓	✓
3	x	x	✓	✓	✓
4	x	x	x	✓	✓
IAS award	✓	✓	✓	✓	✓
IAL award	x	x	x	✓	✓

From June 2017, **all four units will be assessed** in January, June and October until 2020, and in January and June from then onwards.

From June 2017 **IAL and IAS will both be awarded** in January, June and October until 2020, and in January and June from then onwards.

Administration and general information

Entries, resitting of units and forbidden combinations

Entries

Details of how to enter students for the examinations for these qualifications can be found in our *International Information Manual*. A copy is made available to all examinations officers and is available on our website, qualifications.pearson.com.

Resitting of units

Candidates can resit any unit irrespective of whether the qualification is to be cashed in. If a candidate resits a unit more than once, only the better of the two most recent attempts of that unit will be available for aggregation to a qualification grade.

Access arrangements, reasonable adjustments, special consideration and malpractice

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 UK 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.

Language of assessment

Assessment of these qualifications will be available in English only. All student work must be in English.

We recommend that students are able to read and write in English at Level B2 of the Common European Framework of Reference for Languages.

Access arrangements

Access arrangements are agreed before an assessment. They allow candidates 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 candidate 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 student 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 student 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, including:

- the needs of the student with the disability
- the effectiveness of the adjustment
- the cost of the adjustment
- 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 candidate'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 their 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.

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 examinations **must** be reported to Pearson using a *JCQ Form M1* (available at www.jcq.org.uk/exams-office/malpractice). The form should be emailed to candidatemalpractice@pearson.com. Please provide as much information and supporting documentation as possible. Note that the final decision regarding appropriate sanctions lies with Pearson.

Failure to report 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 which 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 should be emailed to pqsmalpractice@pearson.com. 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 *Suspected Malpractice in Examinations and Assessments Policies and Procedures* available at www.jcq.org.uk/exams-office/malpractice.

Awarding and reporting

The Pearson Edexcel International Advanced Subsidiary in Psychology will be graded on a five-grade scale from A to E. The Pearson Edexcel International Advanced Level in Psychology will be graded on a six-point scale A* to E. Individual unit results will be reported. Only units 1 and 2 will contribute to the International Advanced Subsidiary grade. All four units will contribute to the International Advanced Level grade.

The first certification opportunity for the Pearson Edexcel International Advanced Subsidiary in Psychology will be in August 2016. The first certification opportunity for the Pearson Edexcel International Advanced Level in Psychology will be in August 2017. A pass in an International Advanced Subsidiary subject is indicated by one of the five grades A, B, C, D, E, of which grade A is the highest and grade E the lowest. A pass in an International Advanced Level subject is indicated by one of the six grades A*, A, B, C, D, E, of which grade A* is the highest and grade E the lowest. Candidates 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.

Unit results

Candidates will receive a uniform mark between 0 and the maximum uniform mark for each unit.

The uniform marks at each grade threshold for each unit are:

Units 1 and 3

Unit grade	Maximum uniform mark	A	B	C	D	E
	80	64	56	48	40	32

Units 2 and 4

Unit grade	Maximum uniform mark	A	B	C	D	E
	120	96	84	72	60	48

Qualification results

The minimum uniform marks required for each grade:

International Advanced Subsidiary (cash-in code: XPS01)

Qualification grade	Maximum uniform mark	A	B	C	D	E
	200	160	140	120	100	80

Candidates with a uniform mark in the range 0–79 will be Unclassified (U).

International Advanced Level (cash-in code: YPS01)

Qualification grade	Maximum uniform mark	A	B	C	D	E
	400	320	280	240	200	160

Candidates with a uniform mark in the range 0–159 will be Unclassified (U).

To be awarded an A*, candidates will need to achieve an A for the International Advanced Level qualification (at least 320 uniform marks) **and** at least 90 percent of the total uniform mark available across the IA2 units combined (at least 180 uniform marks).

Student recruitment and progression

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 these qualifications.

Students who would benefit most from studying these qualifications are likely to have a Level 2 qualification such as a GCSE in Psychology.

Progression

Students can progress from these qualifications to further studies in Psychology as well as to a wide range of other subjects.

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Appendix 1: Codes

Type of code	Use of code	Code
Unit codes	Each unit is assigned a unit code. This unit code is used as an entry code to indicate that a student wishes to take the assessment for that unit. Centres will need to use the entry codes only when entering students for their examination.	Unit 1: WPS01/01 Unit 2: WPS02/01 Unit 3: WPS03/01 Unit 4: WPS04/01
Cash-in codes	The cash-in code is used as an entry code to aggregate the student's unit scores to obtain the overall grade for the qualification. Centres will need to use the entry codes only when entering students for their qualification.	International Advanced Subsidiary – XPS01 International Advanced Level – YPS01
Entry codes	The entry codes are used to: <ul style="list-style-type: none"> • enter a student for the assessment of a unit • aggregate the student's unit scores to obtain the overall grade for the qualification. 	Please refer to the <i>Pearson Information Manual</i> , available on our website.

Appendix 2: Pearson World Class Qualification design principles

Pearson’s World Class Qualification design principles mean that all Pearson Edexcel qualifications are developed to be **rigorous, demanding, inclusive and empowering**.



We work collaboratively to gain approval from an external panel of educational thought leaders and assessment experts from across the globe. This is to ensure that Pearson Edexcel qualifications are globally relevant, represent world-class best practice in qualification and assessment design, maintain a consistent standard and support learner progression in today’s fast-changing world.

Pearson’s Expert Panel for World-Class Qualifications is chaired by Sir Michael Barber, a leading authority on education systems and reform. He is joined by a wide range of key influencers with expertise in education and employability.

"I’m excited to be in a position to work with the global leaders in curriculum and assessment to take a fresh look at what young people need to know and be able to do in the 21st century, and to consider how we can give them the opportunity to access that sort of education." Sir Michael Barber.

Endorsement from Pearson’s Expert Panel for World Class Qualifications for the International Advanced Subsidiary (IAS)/International Advanced Level (IAL) development process

May 2014

“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 world class 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.

Importantly, we have worked to ensure that the content and learning is future oriented, and that the design has been guided by Pearson’s Efficacy Framework. This is a structured, evidenced process which means that 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 but as a result of our work as a panel we are confident that we have supported the development of Edexcel IAS and IAL 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

Dr Peter Hill

Former Chief Executive ACARA

Professor Jonathan Osborne

Stanford University

Professor Dr Ursula Renold

Federal Institute of Technology, Switzerland

Professor Janice Kay

Provost, University of Exeter

Jason Holt

CEO, Holts Group

Professor Lee Sing Kong

Dean and Managing Director, National Institute of Education International, Singapore

Bahram Bekhradnia

President, Higher Education Policy Institute

Dame Sally Coates

Director of Academies (South), United Learning Trust

Professor Bob Schwartz

Harvard Graduate School of Education

Jane Beine

Head of Partner Development, John Lewis Partnership

All titles correct as at May 2014

Appendix 3: 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 21st-century skills frameworks. Following on from this process, we identified the National Research Council's (NRC) framework ^[2] as the most evidence-based and robust skills framework, and have used this as a basis for our adapted skills framework.

The framework includes cognitive, intrapersonal skills and interpersonal skills.

The NRC framework is included alongside literacy and numeracy skills.



The skills have been interpreted for this specification to ensure they are appropriate for the subject. All of the skills listed are evident or accessible in the teaching, learning and/or assessment of the qualifications. Some skills are directly assessed. Pearson materials will support you in identifying these skills and developing these skills in students.

The table overleaf sets out the framework and gives an indication of the skills that can be found in psychology and indicates the interpretation of the skill in this area. A full subject interpretation of each skill, with mapping to show opportunities for student development is given on the subject pages of our website: qualifications.pearson.com

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)

(Align in the same way as the reference above.)

Cognitive skills	Cognitive processes and strategies	<ul style="list-style-type: none"> • Critical thinking • Problem solving • Analysis • Reasoning/argumentation • Interpretation • Decision making • Adaptive learning • Executive function 	<p>Developing a critical perspective on psychology by analysing the way psychological theory and research can be critically evaluated.</p>
	Creativity	<ul style="list-style-type: none"> • Creativity • Innovation 	
Intrapersonal skills	Intellectual openness	<ul style="list-style-type: none"> • Adaptability • Personal and social responsibility • Continuous learning • Intellectual interest and curiosity 	<p>Ability to work autonomously, be self-motivating and self-monitoring, reflecting on psychological learning and areas for development, drawing on the ability to apply concepts coherently and with reasoned logic.</p>
	Work ethic/conscientiousness	<ul style="list-style-type: none"> • Initiative • Self-direction • Responsibility • Perseverance • Productivity • Self-regulation (metacognition, forethought, reflection) • Ethics • Integrity 	
	Positive core self-evaluation	<ul style="list-style-type: none"> • Self-monitoring/self-evaluation/self-reinforcement 	
Interpersonal skills	Teamwork and collaboration	<ul style="list-style-type: none"> • Communication • Collaboration • Teamwork • Cooperation • Empathy/perspective taking • Negotiation 	<p>Working with others to develop knowledge and understanding of psychological theory and evidence, working together to address the core features of psychological debate.</p>
	Leadership	<ul style="list-style-type: none"> • Responsibility • Assertive communication • Self-presentation 	

Appendix 4: Level 3 Extended Project qualification

What is the Extended Project?

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

- is recognised by higher education institutions for the skills it develops
- is worth half of an International Advanced Level (IAL) 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 for in-depth study (which may or may not be related to an IAL subject they are already studying), guided by their teacher.

Students can choose from one of four approaches 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 non-examined assessment-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.

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) and an 80-GLH guided element that includes mentoring students through the project work. The qualification is 100% internally assessed and externally moderated.

How to link the Extended Project with psychology

The Extended Project creates the opportunity 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 from within the psychology qualification content.

Through the Extended Project, students will develop skills that support their study of psychology, including:

- 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.

Types of Extended Project related to psychology

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.

The dissertation uses 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 from primary research, for example:

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

Using the Extended Project to support breadth and depth

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 should demonstrate that they have extended themselves in some significant way beyond what they have been studying in psychology. Students can 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, an editable scheme of work and exemplars for all four approaches, can be found on our website.

Appendix 5: Glossary

Term	Definition
Assessment objectives	The requirements that students need to meet to succeed in the qualification. Each assessment objective has a unique focus, which is then targeted in examinations or coursework/non-examined assessment. Assessment objectives may be assessed individually or in combination.
External assessment	An examination that is held at the same time and place in a global region.
International Advanced Subsidiary	Abbreviated to IAS.
International Advanced Level	Abbreviated to IAL.
International A2 (IA2)	The additional content required for an IAL.
Linear	Linear qualifications have all assessments at the end of a course of study. It is not possible to take one assessment earlier in the course of study.
Modular	Modular qualifications contain units of assessment. These units can be taken during the course of study. The final qualification grade is worked out from the combined unit results.
Non-examined assessment (NEA)	This is any assessment that is not sat in examination conditions at a fixed time and place. It includes coursework, oral examinations and practical examinations.
Raw marks	Raw marks are the actual marks that candidates achieve when taking an assessment. When calculating an overall grade, raw marks often need to be converted so that it is possible to see the proportionate achievement of a candidate across all units of study.
Uniform Mark Scale (UMS)	Candidate's actual marks (or raw marks) will be converted into a UMS mark so that it is possible to see the proportionate result of a candidate. Two units may each be worth 25 percent of a total qualification. The raw marks for each unit may differ, but the uniform mark will be the same.
Unit	A modular qualification will be divided into a number of units. Each unit will have its own assessment.

Appendix 6: Use of calculators

Candidates may use a calculator in assessments for these qualifications. Centres are responsible for making sure that calculators used by their students meet the requirements given in the table below.

Candidates must be familiar with the requirements before their assessments for these qualifications.

<p>Calculators must be:</p> <ul style="list-style-type: none"> • of a size suitable for use on a desk • either battery- or solar-powered • free of lids, cases and covers that contain printed instructions or formulae. 	<p>Calculators must not:</p> <ul style="list-style-type: none"> • be designed or adapted to offer any of these facilities: <ul style="list-style-type: none"> ○ language translators ○ symbolic algebraic manipulation ○ symbolic differentiation or integration ○ communication with other machines or the internet • be borrowed from another candidate during an examination for any reason* • have retrievable information stored in them. This includes: <ul style="list-style-type: none"> ○ databanks ○ dictionaries ○ mathematical formulae ○ text.
<p>The candidate is responsible for the following:</p> <ul style="list-style-type: none"> • the calculator's power supply • the calculator's working condition • clearing anything stored in the calculator. 	

*An invigilator may give a candidate a calculator.

Further information can be found in the JCQ documents *Instructions for conducting examinations* and *Information for candidates – written exams*, available at www.jcq.org.uk/exams-office.

Appendix 7: 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 (DfE) 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 percent of the overall marks for this qualification.

Mathematical skills		Exemplification of mathematical skill in the context of 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 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 or a table 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.1.10	Distinguish between levels of measurement	For example, stating the level of measurement (nominal, ordinal or interval) that has been used in a study.
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.1.12	Select an appropriate statistical test	For example, selecting a suitable inferential test for a given practical investigation and explaining why the chosen test is appropriate.
D.1.13	Use statistical tables to determine significance	For example, using an extract from statistical tables to say whether or not a given observed value is significant at the 0.05 level of significance for a one-tailed test.
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.

Mathematical skills		Exemplification of mathematical skill in the context of Psychology (assessment is not limited to the examples given below)
D.2 – Algebra		
D.2.1	Understand and use the symbols =, <, <<, >>, >, ∞, ~.	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.
D.2.2	Substitute numerical values into algebraic equations using appropriate units for physical quantities	For example, inserting the appropriate values from a given set of data into the formula for a statistical test such as inserting the N value (for the number of scores) into the Chi squared formula.
D.2.3	Solve simple algebraic equations	For example, calculating the degrees of freedom for a Chi squared test.
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 8: Formulae and statistical tables

Standard deviation (sample estimate)

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

Spearman's rank correlation coefficient

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

Critical values for Spearman's rank

N	Level of significance for a one-tailed test				
	0.05	0.025	0.01	0.005	0.0025
N	Level of significance for a two-tailed test				
	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

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

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.

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

<i>n</i>	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	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 9: Command word taxonomy

The following command words in this taxonomy will be used consistently by Pearson in its assessments to ensure candidates are rewarded for demonstrating the necessary skills. Careful consideration has been given to this taxonomy 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	Fill in/write all the details asked for.
Convert	Express a quantity in alternative units.
Define	Provide a definition of something.
Describe	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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