Diploma
Programme

Psychology guide

First examinations 2019

International Baccalaureate®
Baccalauréat International
Bachillerato Internacional

Psychology guide

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IB mission statement

The International Baccalaureate aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect.

To this end the organization works with schools, governments and international organizations to develop challenging programmes of international education and rigorous assessment.

These programmes encourage students across the world to become active, compassionate and lifelong learners who understand that other people, with their differences, can also be right.

IB learner profile

The aim of all IB programmes is to develop internationally minded people who, recognizing their common humanity and shared guardianship of the planet, help to create a better and more peaceful world.

As IB learners we strive to be:

INQUIRERS
We nurture our curiosity, developing skills for inquiry and research. We know how to learn independently and with others. We learn with enthusiasm and sustain our love of learning throughout life.

KNOWLEDGEABLE
We develop and use conceptual understanding, exploring knowledge across a range of disciplines. We engage with issues and ideas that have local and global significance.

THINKERS
We use critical and creative thinking skills to analyse and take responsible action on complex problems. We exercise initiative in making reasoned, ethical decisions.

COMMUNICATORS
We express ourselves confidently and creatively in more than one language and in many ways. We collaborate effectively, listening carefully to the perspectives of other individuals and groups.

PRINCIPLED
We act with integrity and honesty, with a strong sense of fairness and justice, and with respect for the dignity and rights of people everywhere. We take responsibility for our actions and their consequences.

OPEN-MINDED
We critically appreciate our own cultures and personal histories, as well as the values and traditions of others. We seek and evaluate a range of points of view, and we are willing to grow from the experience.

CARING
We show empathy, compassion and respect. We have a commitment to service, and we act to make a positive difference in the lives of others and in the world around us.

RISK-TAKERS
We approach uncertainty with forethought and determination; we work independently and cooperatively to explore new ideas and innovative strategies. We are resourceful and resilient in the face of challenges and change.

BALANCED
We understand the importance of balancing different aspects of our lives—intellectual, physical, and emotional—to achieve well-being for ourselves and others. We recognize our interdependence with other people and with the world in which we live.

REFLECTIVE
We thoughtfully consider the world and our own ideas and experience. We work to understand our strengths and weaknesses in order to support our learning and personal development.

The IB learner profile represents 10 attributes valued by IB World Schools. We believe these attributes, and others like them, can help individuals and groups become responsible members of local, national and global communities.

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Purpose of this document

This publication is intended to guide the planning, teaching and assessment of the subject in schools. Subject teachers are the primary audience, although it is expected that teachers will use the guide to inform students and parents about the subject.

This guide can be found on the subject page of the online curriculum centre (OCC) at http://occ.ibo.org, a password-protected IB website designed to support IB teachers. It can also be purchased from the IB store at http://store.ibo.org.

Additional resources

Additional publications such as specimen papers and markschemes, teacher support materials, subject reports and grade descriptors can also be found on the OCC. Past examination papers as well as markschemes can be purchased from the IB store.

Teachers are encouraged to check the OCC for additional resources created or used by other teachers. Teachers can provide details of useful resources, for example: websites, books, videos, journals or teaching ideas.

Acknowledgment

The IB wishes to thank the educators and associated schools for generously contributing time and resources to the production of this guide.

First assessment 2019

The Diploma Programme is a rigorous pre-university course of study designed for students in the 16 to 19 age range. It is a broad-based two-year course that aims to encourage students to be knowledgeable and inquiring, but also caring and compassionate. There is a strong emphasis on encouraging students to develop intercultural understanding, open-mindedness, and the attitudes necessary for them to respect and evaluate a range of points of view.

The Diploma Programme model

The course is presented as six academic areas enclosing a central core (see figure 1). It encourages the concurrent study of a broad range of academic areas. Students study two modern languages (or a modern language and a classical language), a humanities or social science subject, an experimental science, mathematics and one of the creative arts. It is this comprehensive range of subjects that makes the Diploma Programme a demanding course of study designed to prepare students effectively for university entrance. In each of the academic areas students have flexibility in making their choices, which means they can choose subjects that particularly interest them and that they may wish to study further at university.

Figure 1

Diploma Programme model

Choosing the right combination

Students are required to choose one subject from each of the six academic areas, although they can, instead of an arts subject, choose two subjects from another area. Normally, three subjects (and not more than four) are taken at higher level (HL), and the others are taken at standard level (SL). The IB recommends 240 teaching hours for HL subjects and 150 hours for SL. Subjects at HL are studied in greater depth and breadth than at SL.

At both levels, many skills are developed, especially those of critical thinking and analysis. At the end of the course, students' abilities are measured by means of external assessment. Many subjects contain some element of coursework assessed by teachers.

The core of the Diploma Programme model

All Diploma Programme students participate in the three course elements that make up the core of the model.

Theory of knowledge (TOK) is a course that is fundamentally about critical thinking and inquiry into the process of knowing rather than about learning a specific body of knowledge. The TOK course examines the nature of knowledge and how we know what we claim to know. It does this by encouraging students to analyse knowledge claims and explore questions about the construction of knowledge. The task of TOK is to emphasize connections between areas of shared knowledge and link them to personal knowledge in such a way that an individual becomes more aware of his or her own perspectives and how they might differ from others.

Creativity, activity, service (CAS) is at the heart of the Diploma Programme. The emphasis in CAS is on helping students to develop their own identities, in accordance with the ethical principles embodied in the IB mission statement and the IB learner profile. It involves students in a range of activities alongside their academic studies throughout the Diploma Programme. The three strands of CAS are creativity (arts, and other experiences that involve creative thinking), activity (physical exertion contributing to a healthy lifestyle) and service (an unpaid and voluntary exchange that has a learning benefit for the student). Possibly, more than any other component in the Diploma Programme, CAS contributes to the IB's mission to create a better and more peaceful world through intercultural understanding and respect.

The extended essay, including the world studies extended essay, offers the opportunity for IB students to investigate a topic of special interest, in the form of a 4,000-word piece of independent research. The area of research undertaken is chosen from one of the students' six Diploma Programme subjects, or in the case of the interdisciplinary world studies essay, two subjects, and acquaints them with the independent research

and writing skills expected at university. This leads to a major piece of formally presented, structured writing, in which ideas and findings are communicated in a reasoned and coherent manner, appropriate to the subject or subjects chosen. It is intended to promote high-level research and writing skills, intellectual discovery and creativity. An authentic learning experience, it provides students with an opportunity to engage in personal research on a topic of choice, under the guidance of a supervisor.

Approaches to teaching and approaches to learning

Approaches to teaching and learning across the Diploma Programme refers to deliberate strategies, skills and attitudes which permeate the teaching and learning environment. These approaches and tools, intrinsically linked with the learner profile attributes, enhance student learning and assist student preparation for the Diploma Programme assessment and beyond. The aims of approaches to teaching and learning in the Diploma Programme are to:

•   empower teachers as teachers of learners as well as teachers of content

•   empower teachers to create clearer strategies for facilitating learning experiences in which students are more meaningfully engaged in structured inquiry and greater critical and creative thinking

•   promote both the aims of individual subjects (making them more than course aspirations) and linking previously isolated knowledge (concurrency of learning)

•   encourage students to develop an explicit variety of skills that will equip them to continue to be actively engaged in learning after they leave school, and to help them not only obtain university admission through better grades but also prepare for success during tertiary education and beyond

•   enhance further the coherence and relevance of the students' Diploma Programme experience

•   allow schools to identify the distinctive nature of an IB Diploma Programme education, with its blend of idealism and practicality.

The five approaches to learning (developing thinking skills, social skills, communication skills, self-management skills and research skills) along with the six approaches to teaching (teaching that is inquiry-based, conceptually focused, contextualized, collaborative, differentiated and informed by assessment) encompass the key values and principles that underpin IB pedagogy.

The IB mission statement and the IB learner profile

The Diploma Programme aims to develop in students the knowledge, skills and attitudes they will need to fulfill the aims of the IB, as expressed in the organization's mission statement and the learner profile. Teaching and learning in the Diploma Programme represent the reality in daily practice of the organization's educational philosophy.

Academic honesty

Academic honesty in the Diploma Programme is a set of values and behaviours informed by the attributes of the learner profile. In teaching, learning and assessment, academic honesty serves to promote personal integrity, engender respect for the integrity of others and their work, and ensure that all students have an equal opportunity to demonstrate the knowledge and skills they acquire during their studies.

All coursework—including work submitted for assessment—is to be authentic, based on the student's individual and original ideas with the ideas and work of others fully acknowledged. Assessment tasks that require teachers to provide guidance to students or that require students to work collaboratively must be completed in full compliance with the detailed guidelines provided by the IB for the relevant subjects.

For further information on academic honesty in the IB and the Diploma Programme, please consult the IB publications *Academic honesty in the IB educational context*, *Diploma Programme: From principles into practice* and *General regulations: Diploma Programme*. Specific information regarding academic honesty as it pertains to external and internal assessment components of this Diploma Programme subject can be found in this guide.

Acknowledging the ideas or work of another person

Coordinators and teachers are reminded that candidates must acknowledge all sources used in work submitted for assessment. The following is intended as a clarification of this requirement.

Diploma Programme candidates submit work for assessment in a variety of media that may include audio-visual material, text, graphs, images and/or data published in print or electronic sources. If a candidate uses the work or ideas of another person, the candidate must acknowledge the source using a standard style of referencing in a consistent manner. A candidate's failure to acknowledge a source will be investigated by the IB as a potential breach of regulations that may result in a penalty imposed by the IB final award committee.

The IB does not prescribe which style(s) of referencing or in-text citation should be used by candidates; this is left to the discretion of appropriate faculty/staff in the candidate's school. The wide range of subjects, three response languages and the diversity of referencing styles make it impractical and restrictive to insist on particular styles. In practice, certain styles may prove most commonly used, but schools are free to choose a style that is appropriate for the subject concerned and the language in which candidates' work is written. Regardless of the reference style adopted by the school for a given subject, it is expected that the minimum information given includes: name of author, date of publication, title of source, and page numbers as applicable.

Candidates are expected to use a standard style and use it consistently so that credit is given to all sources used, including sources that have been paraphrased or summarized. When writing text candidates must clearly distinguish between their words and those of others by the use of quotation marks (or other method, such as indentation) followed by an appropriate citation that denotes an entry in the bibliography. If an electronic source is cited, the date of access must be indicated. Candidates are not expected to show faultless expertise in referencing, but are expected to demonstrate that all sources have been acknowledged. Candidates must be advised that audio-visual material, text, graphs, images and/or data published in print or in electronic sources that is not their own must also attribute the source. Again, an appropriate style of referencing/citation must be used.

Learning diversity and learning support requirements

Schools must ensure that equal access arrangements and reasonable adjustments are provided to candidates with learning support requirements that are in line with the IB documents *Candidates with assessment access requirements* and *Learning diversity and inclusion in IB programmes*.

Psychology

Psychology is the rigorous and systematic study of mental processes and behaviour. It is a complex subject which draws on concepts, methods and understandings from a number of different disciplines. There is no single approach that would describe or explain mental processes and behaviour on its own as human beings are complex animals, with highly developed frontal lobes, cognitive abilities, involved social structures and cultures. The study of behaviour and mental processes requires a multidisciplinary approach and the use of a variety of research techniques whilst recognising that behaviour is not a static phenomenon, it is adaptive, and as the world, societies and challenges facing societies change, so does behaviour.
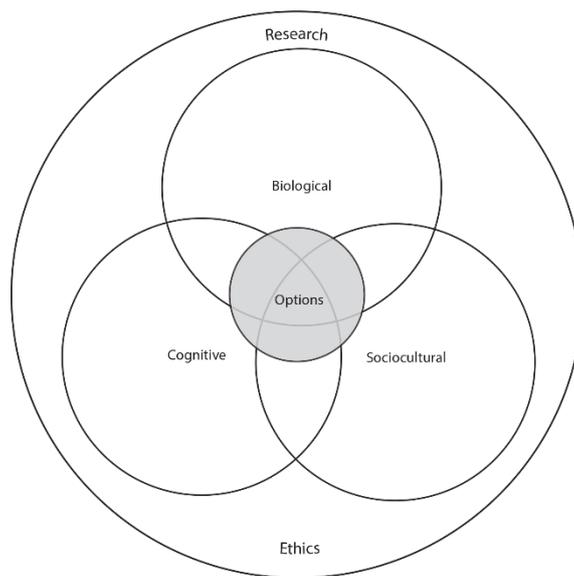
Figure 2

Approaches to understanding behaviour

At the core of the DP psychology course is an introduction to three different approaches to understanding behaviour:

- biological approach to understanding behaviour

- cognitive approach to understanding behaviour

- sociocultural approach to understanding behaviour.

The knowledge, concepts, theories and research that have developed the understanding in these fields will be studied and critically evaluated to answer some of the questions being asked by psychologists today. Furthermore, the interaction of these approaches to studying psychology will form the basis of a holistic and integrated approach to understanding mental processes and behaviour as a complex, dynamic phenomenon, allowing students to appreciate the diversity as well as the commonality between their own behaviour and that of others.

The contribution and the interaction of the three approaches can be best understood through the options. There are four options in the course. They focus on areas of applied psychology:

- abnormal psychology

- developmental psychology

- health psychology

- psychology of relationships.

The options provide an opportunity to take what is learned from the study of the approaches to psychology and put it into the context of specific lines of inquiry, broaden students' experience of the discipline and develop the students' critical inquiry skills.

Surrounding the approaches and the options are the overarching themes of research and ethics. A consideration of both is paramount to the nature of the subject.

Psychologists employ a range of research methods, both qualitative and quantitative, in order to test their observations and hypotheses. As a part of the core syllabus, DP psychology promotes an understanding of the various approaches to research and how they have been used in order to critically reflect on the evidence as well as assist in the design, implementation, analysis and evaluation of the students' own investigations.

Psychology studies human beings and as such it is paramount that the ethical implications in any line of investigation, and at all points in the course, are fully explored and understood to ensure that ethical guidelines are followed at all times.

Distinction between SL and HL

There are three main distinctions between this course at SL and at HL.

1. The following extensions to the core approaches are studied at HL only:

    - the role of animal research in understanding human behaviour

    - cognitive processing in the digital world

    - the influence of globalization on individual attitudes, identities and behaviour.

This differentiation is reflected in paper 1 section B of the external assessment.

2. SL students are required to study one option while HL students study two options. This differentiation is reflected in paper 2 of the external assessment.

3. Both SL and HL students will be expected to show their understanding of approaches to research in the internal assessment and for criterion D (critical thinking) in paper 1 section B and paper 2 responses. Additionally, HL students will be directly assessed on their understanding of approaches to research in paper 3 of the external assessment. This will cover both qualitative and quantitative research methods.

Psychology and the core

Psychology and TOK

TOK is invaluable for exploring some of the bigger questions relevant to the teaching, learning and practice of psychology. Questions that can be explored include the following.

- Can models and theories be used to understand and predict human behaviour?

- Does a researcher's choice of methodology affect the reliability or credibility of research?

- Is what we know about human behaviour limited by our ethical considerations?

- Are emotions universal?

- Are the methods of the natural sciences applicable in the social sciences?

- Are there human qualities or behaviours that will remain beyond the scope of science?

As with other areas of knowledge, there are a variety of ways of gaining knowledge in the social sciences, including observation and experimentation, inductive and deductive reasoning, and the collection of evidence.

Having followed a course of study in an individuals and societies subject, students should be able to reflect critically on the various ways of knowing and on the methods used in the social sciences, and in so doing become inquiring, knowledgeable and caring young people, as described in the IB learner profile.

More information on TOK can be found in the *Theory of knowledge guide*.

Psychology and CAS

CAS plays a crucial role in the DP in the development of personal and interpersonal skills. It also provides an important counterbalance to the academic pressures of the DP, allowing and valuing exploration and engagement beyond the academic.

Examples of CAS experiences with links to psychology include the following:

• acting as a mentor to children in lower years

• designing a welcome pack for students new to the school

• promoting a healthy lifestyle.

More information on CAS can be found in the *Creativity, activity, service guide*.

Psychology and the extended essay

Psychology is a popular subject choice for extended essays. The research skills developed by students undertaking an extended essay in psychology not only benefit them in their study of DP psychology, but also prepare them for study in psychology and other subjects beyond the DP. Examples of topics for extended essays in psychology include:

• To what extent does emotional intelligence improve job performance in the workplace?

• To what extent is nudging useful in promoting healthy eating in adolescent boys?

• To what extent can acculturative stress be a risk factor for depression?

More information for teachers who are acting as supervisors for students completing extended essays in psychology can be found on the *Extended essay* website.

Psychology and international-mindedness

International-mindedness is an umbrella term through which the IB defines the goal of international education, and which is exemplified by the emphasis in all IB programmes on promoting global engagement, multilingualism and intercultural understanding.

The DP psychology course develops an understanding of how our behaviour is shaped by the societies and cultures we experience and how we in turn shape our environment. The course also aids in the understanding of individual mental processes and behaviour with all its nuances and flaws and supports the understanding that others can also be right.

The layout of the psychology course as it appears in this guide is for information and does not represent a scheme of work. A holistic approach to the content of the course is encouraged and much of the content in one approach can be linked to the study of another. For example, cognitive processes and the methods used to understand the brain are closely related. This is also true of the options which build on the understandings from the approaches. In addition, the options have been framed to encourage the use of examples relevant to local as well as global contexts.

The internal assessment requires the development of social, communication and self-management skills through collaboration and teamwork, but a problem-based approach to the content would foster and develop these skills further. Underpinning all the approaches to teaching and learning in this course is a focus on the development of critical thinking. The three approaches to studying human mental processes and behaviour, as well as the recognition that psychology is evidence based, provide ample opportunity for the development of critical thinking skills.

For a more general overview of approaches to teaching and learning in the Diploma Programme, please see the *Approaches to teaching and learning* website.

A useful framework for developing and practising a critical approach to research in psychology is the summary below from Wade and Tavris. (Wade, C and Tavris, C. 1990. *Psychology*. 2nd edition. New York. Harper and Row.)

Ask questions, challenge assertions.

- Why are some studies still so influential in spite of their methodological or theoretical flaws?

- What was the historical context of the research?

Define the problem.

- This helps the student to focus his or her argument and keep it on track.

Examine the evidence for and against.

- Evaluate the research that gives support, fails to give support, or contradicts a theory.

- Avoid emotional reasoning and be aware of one's own biases.

- Reflexivity can be used to reduce a student's own bias.

Do not oversimplify.

- Recognize reductionist arguments.

- Consider alternative explanations.

- Be aware of the findings of other studies or alternative theories.

Tolerate uncertainty.

- It is acceptable to say that research is inconclusive or contradictory.

Employ cultural evaluation.

- Make comparisons with studies done in other cultures.

- Is there a cultural bias in the theory/study?

Employ gender evaluation.

- Has gender been considered as a variable in the theory/study?

- Is there a gender bias in the theory/study?

Employ methodological evaluation.

- What strengths and limitations are inherent in the methodology/method/technique used?

- Are there aspects of the method used that compromise its validity (for example, representativeness of the sample)?

- What would happen if the study were repeated today with different subjects?

- Consider the use of triangulation to evaluate findings.

Employ ethical evaluation.

- Would the study be acceptable to modern ethical committees?

- Is there any justification for the infringement of ethical standards?

Evaluate by comparison.

- How effective is the theory in explaining the behaviour compared with another theory?

- How do the findings of study X compare with those of study Y, and what could account for any differences?

Engaging with sensitive topics

The study of psychology provides students with an opportunity to engage with exciting, stimulating and personally relevant topics and issues, however, it should be noted that often such topics and issues can also be sensitive and personally challenging. Teachers should be aware of this and provide guidance to students on how to approach and engage with such topics and issues in a responsible and inclusive manner. Providing a safe environment in which discussion may be facilitated is an important role of the teacher.

Prior learning and links to the Middle Years Programme

No prior study of psychology is expected. No particular background in terms of specific subjects studied for national or international qualifications is expected or required of students. The skills needed for the psychology course are developed during the course itself.

Psychology can be offered as one of the subjects within the individuals and societies subject group of the IB Middle Years Programme (MYP). MYP individuals and societies is a concept-driven curriculum aimed at helping the learner construct meaning through improved critical thinking and the transfer of knowledge. The MYP course uses a framework of key concepts. These are broad, organizing, powerful ideas that have relevance within the subject but also transcend it, having relevance in other subject groups. Regardless of whether it is psychology or another subject from the subject group, the fundamental concepts of MYP individuals and societies provide a very useful foundation for students who go on to study the DP psychology course.

Individuals and societies aims

The aims of all subjects in group 3, individuals and societies, are to:

1. encourage the systematic and critical study of: human experience and behaviour; physical, economic and social environments; the history and development of social and cultural institutions

2. develop in the student the capacity to identify, to analyse critically and to evaluate theories, concepts and arguments about the nature and activities of the individual and society

3. enable the student to collect, describe and analyse data used in studies of society, to test hypotheses and interpret complex data and source material

4. promote the appreciation of the way in which learning is relevant to both the culture in which the student lives and the culture of other societies

5. develop an awareness in the student that human attitudes and opinions are widely diverse and that a study of society requires an appreciation of such diversity

6. enable the student to recognize that the content and methodologies of the subjects in group 3 are contestable and that their study requires the toleration of uncertainty.

Psychology aims

The aims of the psychology course at SL and at HL are to:

1. develop an understanding of the biological, cognitive and sociocultural factors affecting mental processes and behaviour

2. apply an understanding of the biological, cognitive and sociocultural factors affecting mental processes and behaviour to at least one applied area of study

3. understand diverse methods of inquiry

4. understand the importance of ethical practice in psychological research in general and observe ethical practice in their own inquiries

5. ensure that ethical practices are upheld in all psychological inquiry and discussion

6. develop an awareness of how psychological research can be applied to address real-world problems and promote positive change.

Assessment objectives

By the end of the psychology course at SL or at HL, students will be expected to demonstrate the following.

1. Knowledge and comprehension of specified content

    • Demonstrate knowledge and comprehension of key terms and concepts in psychology.

    • Demonstrate knowledge and comprehension of a range of psychological theories and research studies.

    • Demonstrate knowledge and comprehension of the biological, cognitive and sociocultural approaches to mental processes and behaviour.

    • Demonstrate knowledge and comprehension of research methods used in psychology.

2. Application and analysis

    • Demonstrate an ability to use examples of psychological research and psychological concepts to formulate an argument in response to a specific question.

    • Demonstrate application and analysis of a range of psychological theories and research studies.

    • Demonstrate application and analysis of the knowledge relevant to areas of applied psychology.

    • At HL only, analyse qualitative and quantitative research in psychology.

3. Synthesis and evaluation

    • Evaluate the contribution of psychological theories to understanding human psychology.

    • Evaluate the contribution of research to understanding human psychology.

    • Evaluate the contribution of the theories and research in areas of applied psychology.

    • At HL only, evaluate research scenarios from a methodological and ethical perspective.

4. Selection and use of skills appropriate to psychology

    • Demonstrate the acquisition of skills required for experimental design, data collection and presentation, data analysis and the evaluation of a simple experiment while demonstrating ethical practice.

    • Work in a group to design a method for a simple experimental investigation, organize the investigation and record the required data for a simple experiment.

    • Write a report of a simple experiment.

Syllabus outline

Syllabus component	Teaching hours	
	SL	HL
Core	90	120
Biological approach to understanding behaviour		
Cognitive approach to understanding behaviour		
Sociocultural approach to understanding behaviour		
Approaches to researching behaviour	20	60
Options		
Abnormal psychology	20	40
Developmental psychology		
Health psychology		
Psychology of human relationships		
Internal assessment		
Experimental study	20	20
Total teaching hours	**150**	**240**

The recommended teaching time is 240 hours to complete HL courses and 150 hours to complete SL courses as stated in the document *General regulations: Diploma Programme* (article 8.2)

Syllabus content

The syllabus as provided in this subject guide is not intended to be in teaching order. Instead it provides detail of what must be covered by the end of the course. A school should develop a scheme of work that best works for its students. For example, the scheme of work could be developed to match available resources, to take into account student prior learning and experience, or in conjunction with other local requirements. However the course is planned, adequate time must be provided for examination revision. Time must also be given for students to reflect on their learning experience and their growth as learners.

The approaches to understanding behaviour are laid out in topics. The content for each topic is detailed in the middle column, with explanatory notes in the dropdown boxes. Guidance for the content is in the dropdown boxes in the right-hand column.

The approaches to behaviour are compulsory for SL and HL students (except for the HL extension, which is for HL students only).

The core will be assessed in paper 1 of the external assessment, but it also forms the foundation for teaching and learning in the options.

The approaches to research are for both SL and HL students. They are organized to reflect the considerations made when reading or preparing a piece of research. Only HL students will be formally assessed on the approaches to research in paper 3.

Biological approach to understanding behaviour

The biological approach to understanding behaviour is largely an investigation into correlations. Do areas of the brain correlate with behaviour? When changes take place in the brain do changes take place in behaviour or is the reverse the case? Could an individual's behaviour be predicted from their genes? Is human behaviour subject to natural selection?

The relationship between biology and behaviour is a complex one of mutual causality. The technology available to investigate this relationship is becoming ever more sophisticated, while the ethics of this line of inquiry are increasingly an area for public debate.

The biological approach to behaviour looks at:

•   the brain and behaviour (SL and HL)

•   hormones and behaviour (SL and HL)

•   genetics and behaviour (SL and HL)

•   the role of animal research in understanding human behavior (HL only).

Relevant to all the topics are:

•   the contribution of research methods used in the biological approach to understanding human behaviour

•   ethical considerations in the investigation of the biological approach to understanding human behaviour.

Topic	Content	Guidance
The brain and behaviour	**Techniques used to study the brain in relation to behaviour**	**Areas of the human brain related to behaviour**
	The choice of techniques used to correlate the brain with behaviour is based on a variety of factors including opportunity, available technology and costs. An awareness of these limitations as well as the strengths of these different techniques is important when evaluating the contribution they	*An awareness of where the regions of the brain referred to in the research are helps to contextualize learning.*
		Methods used to study the brain
		fMRI, MRI, EEG, CAT, PET are the most frequent techniques used to investigate the relationship between the brain and behaviour in current

have made to understanding behaviour.

Localization

Students should understand the concept of localization and how the function of different parts of the brain is determined as well as the limitations of this model.

Neuroplasticity

The development of neural networks through repetition and neural pruning is both genetic and subject to environmental influences. Neural networks can change developmentally, over time or after injury. This is termed neuroplasticity.

Neurotransmitters and their effect on behaviour

The effect of neurotransmitters on human behaviour can be explained using an appropriate example. Neurotransmitters allow the impulse to cross a synapse (excitatory) or stop the impulse and prevent it from crossing a synapse (inhibitory).

Neurotransmitters are themselves affected by agonists which amplify their effect and antagonists which reduce their effect.

As a result, neurons working together can produce a large variety of effects resulting in a complex repertoire of behaviours. As a result any claim of cause and effect should be treated with caution.

research, but observations from autopsy, stroke and accident victims have all contributed to understanding of the brain and behaviour. One or more examples of a technological technique used to understand the brain and behaviour can be used.

Neural transmission

It is sufficient for students to know that nerve impulses travel along neurons until they reach a synapse. The details of how this is achieved are not required.

Neurotransmitters

Neurotransmitters mediate the events at the synapse. There are many neurotransmitters in the human brain. Serotonin and dopamine are two of the better known. Many hormones can also act as neurotransmitters, for example, adrenaline and oxytocin. One or more examples can be used to illustrate the effect of neurotransmitters.

Neural networks

Neural networks in the brain develop by the making and breaking of synaptic connections between neurons.

Topic	Content	Guidance
Hormones and behaviour	**Hormones and behaviour** *The effect of a hormone on human behaviour can be examined using one or more examples.* **Pheromones and behaviour** *There is increasing evidence that pheromones may play a role in human behaviour, however, none are conclusive. A discussion on the effect of pheromones on behaviour is a*	**Hormones** *Hormones are chemicals released by specific glands in the body to regulate medium- and long-term changes in the body. Some hormones, for example, adrenaline, also act as neurotransmitters and can produce instantaneous effects on mood and attention. One or more examples can be used to study hormonal effects on behaviour.* **Pheromones** *The arguments for and against the influence of pheromones on human*

	useful exercise in critical thinking.	*behaviour can be assessed critically using one or more examples.*

Topic	Content	Guidance
Genetics and behaviour	**Genes and behaviour**	**Nature of the gene**
	The evidence for links between genes and certain types of behaviour requires critical evaluation in the light of environmental factors.	*Genes are made up of DNA which provides the blueprint for the structure and function of the human body. This could include behaviour. An individual's genome refers to all the genes that individual possesses. The link between genes and behaviour can be studied using one or more examples.*
	Genetic similarities	
	Genetic similarity is referred to as relatedness. The greater the genetic similarities between two individuals or a group of individuals the higher the degree of relatedness.	**Gene regulation and gene expression**
	An awareness of the degree of relatedness between MZ and DZ twins, siblings, parents and children, and parents and adopted children provides a critical perspective in evaluating twin or kinship studies.	*Not all genes an individual possesses are expressed at all times. Genes can be switched on and off. This is gene regulation resulting in differential gene expression. Therefore, having a gene for a particular behaviour does not necessarily mean that an individual will exhibit that behaviour.*
	Evolutionary explanations for behaviour	**Factors that affect gene expression**
	If genes code for behaviour as well as physical traits, then behaviour is subject to evolutionary pressures in the same way that physical traits are subject to evolutionary pressures.	*Genes are switched on and off by signals from inside and outside the body. Internal signals include the presence of hormones or other chemicals, or indeed other genes. Hormones are frequently produced as a result of environmental events and work by altering gene expression. There are countless environmental events that also affect gene expression. The signal activates special proteins that can promote or block the expression of a gene. Genes are constantly being switched on and off.*
		Sometimes genes are permanently switched off. This is mostly achieved by methylation of the DNA molecule as part of the developmental process.
		This effect on genes is sometimes referred to as epigenetics as there is no alteration in the actual structure of the DNA. Mutations

		occur when there is an actual alteration of the DNA.
		Survival of the fittest and natural selection
		Competition for scarce resources, like food or mates, leads to the promotion of favourable traits. These traits may be physical or behavioural. Whatever their nature, they are regarded as favourable traits as they allow the individual to acquire sufficient resources in order to survive and reproduce. When the individual reproduces, it passes these traits on to the next generation. The more they reproduce, the more individuals will have the trait in the next generation. This is survival of the fittest by natural selection. Genetics and environmental challenges are therefore both important in the success of specific traits and behaviour. Evolutionary explanations for behaviour can be studied using one or more examples.

HL only: The role of animal research in understanding human behaviour	**The role of animal research in understanding human behaviour**
	For all three topics in the biological approach, and with reference to research studies, HL students should study the following.
	• The value of animal models in psychology research.
	• Whether animal research can provide insight into human behaviour.
	• Ethical considerations in animal research.

Cognitive approach to understanding behaviour

The cognitive approach to understanding behaviour looks at:

• cognitive processing (SL and HL)

• reliability of cognitive processes (SL and HL)

• emotion and cognition (SL and HL)

• cognitive processing in the digital world (HL only).

Relevant to all the topics are:

- the contribution of research methods used in the cognitive approach to understanding human behaviour

- ethical considerations in the investigation of the cognitive approach to understanding human behaviour.

The cognitive approach to behaviour views human beings as processors of information much in the same way as a computer processes information. The cognitive approach to behaviour focuses on areas of research such as schema processing, memory processing, and thinking, and how cognition may influence behaviour. Researchers are also interested in the extent to which cognitive processes are reliable, for example, in relation to thinking and memory. How cognitive processes may be affected in the modern digitalized world is an emerging field within the cognitive approach to behaviour.

Cognitive processes are often influenced in complex ways by emotions. The influence of emotions on cognitive processes is studied not only by cognitive psychologists, but is developing as an area of interest for cognitive neuroscientists as well as social psychologists.

Research methods in the cognitive approach to understanding of behaviour rely on experiments and brain imaging technologies as well as qualitative approaches to understanding everyday memory and thinking, making the cognitive approach an example of the holistic approach to understanding human behaviour.

Topic	Content	Guidance
Cognitive processing	**Models of memory** *The Multi-Store Model of Memory and The Working Memory Model provide a framework for an understanding of conceptualization of human memory processes over time. The working memory model is an elaboration of short-term memory, suggesting a number of components working together to process information.* **Schema theory** *Cognitive schemas are seen as mental representations that organize our knowledge, beliefs and expectations. Multiple studies have indicated that schemas influence memory processes in encoding, storage and retrieval. Schema processing is to a large extent automatic and non-conscious which saves cognitive energy but at the same time could result in biases in thinking and memory processes.*	**Concepts related to memory processing** *Relevant concepts within the study of models of memory, for example:* • *explicit/implicit memory* • *sensory memory, short-term memory, long-term memory* • *central executive, phonological loop, episodic buffer, visuospatial sketchpad.* **Schema processing** *Relevant concepts related to studying schema processing could be but are not limited to:* • *top down, bottom up processing* • *pattern recognition—the matching of a current input to information in memory* • *effort after meaning—the attempt to match unfamiliar ideas into a familiar framework* • *stereotyping—an example of schema processing based on a*

		fixed mental representation of a group of individuals.
	Thinking and decision-making *Thinking involves using information and doing something with it, for example, deciding something. Thinking and decision-making are thus closely related. Thinking is based on factors such as concepts, processes, and goals. Modern research into thinking and decision-making often refers to rational (controlled) and intuitive thinking (automatic). There is an increasing understanding of how emotions may influence thinking and the decision-making process because the consequences of decisions result in the experiencing of emotions and many of our choices are guided by the experience of or anticipation of such emotions.*	*Relevant concepts related to studying thinking and decision-making could be but are not limited to framing, heuristics, loss aversion, and appraisal.* *There are two systems models of thinking:* • *system 1—intuitive, automatic, quick and requiring limited effort, influenced by biases* • *system 2—rational, goal directed, requires intentional effort and time, analyses/controls for biases.* *Models of thinking and decision-making that could be studied include:* • *theory of reasoned action and theory of planned behaviour (concerned with the relationship between attitudes and behaviour when making choices)* • *the adapative decision-maker framework including emotions and goals in the decision process* • *mindset theory arguing that thinking about one's ability is related to decisions of investment in performance.*

Topic	Content	Guidance
Reliability of cognitive processes	**Reconstructive memory** *Human memory is not an exact copy of events but rather a reconstruction that may be altered over time, through discussions with others or input from the media. Research shows that memory may be changed during storage, processing and retrieval, for example, due to schema processing. Knowing this could be important not only in*	**Factors related to the study of reconstructive memory** *Relevant concepts related to studying the nature of reconstructive memory could be but are not limited to:* • **confabulation**—*a memory based on a fabricated, distorted or misinterpreted memory often believed to be true in spite of contradictory evidence* • **schema processing**—*memory processing based on prior knowledge in the form of*

	our daily lives but in particular in relation to eyewitness testimony. **Biases in thinking and decision-making** *Human beings are not always rational thinkers. Instead they rely on intuitive thinking and take cognitive shortcuts resulting in a number of well-researched biases. The tendency to focus on a limited amount of available information, to seek out information that confirms pre-existing beliefs as well as the tendency to avoid the mental stress of holding inconsistent cognitions seem to be common sources of biases in thinking and decision-making.*	*schemas which could result in distortion* • *false memories—recalling an event that never happened and believing it to be true.* **Factors involved in biased thinking and decision-making** *Relevant concepts related to studying factors involved in biased thinking and decision-making could be but are not limited to rational versus intuitive thinking, heuristics, algorithms, anchoring, framing and representativeness as well as these cognitive biases:* • *confirmation bias—the tendency to seek out information to confirm what you already believe* • *cognitive dissonance—a so-called motivational bias that focuses on personal motivation for selection and interpretation of information so that your cognitions are consistent with your decisions and/or behaviour* • *optimism bias—the tendency to think that nothing bad will ever happen to you* • *selective attention—the tendency to focus on a limited amount of stimuli when several are occurring at the same time* • *illusory correlations—the tendency to incorrectly identify correlations where there are none, as for example in "implicit personality theories".*

Topic	Content	Guidance
Emotion and cognition	**The influence of emotion on cognitive processes** *Psychological and neuroscientific research has revealed that emotion and*	**Cognition and emotion** *Psychological and neuroscientific research indicates a relationship between cognition and emotion.*

	cognition are intertwined. Emotions are believed to perform an adaptive function in that they shape the experience of events and guide the individual in how to react to events, objects and situations with reference to personal relevance and well-being. Memories of emotional events sometimes have a persistence and vividness that other memories seem to lack but there is evidence that even highly emotional memories may fade over time.	*Emotion influences our perception of the world and how we remember.* *Relevant concepts related to studying emotion and memory processes could be but are not limited to* • flashbulb memories • theory of the emotional brain • the amygdala's influence on memory encoding • appraisal • state-dependent memory. *Biases in thinking and decision-making can be studied using one or more examples.* **The influence of emotion on cognitive processes** *The influence of emotion on cognitive processes can be studied using one or more examples.*

HL only	**Cognitive processing in the digital world**
Cognitive processing in the digital world	For all three topics in the cognitive approach, and with reference to research studies, HL students should study the following. • The influence of digital technology on cognitive processes and human interaction. • The positive and negative effects of modern technology on cognitive processes. • Methods used to study the interaction between digital technology and cognitive processes.

Sociocultural approach to understanding behaviour

The sociocultural approach to behaviour looks at:

• the individual and the group (SL and HL)

• cultural origins of behaviour (SL and HL)

• cultural influences on individual attitudes, identity and behaviours (SL and HL)

• the influence of globalization on individual attitudes, identities and behaviour (HL only).

Relevant to all the topics are:

- the contribution of research methods used in the sociocultural approach to understanding human behaviour

- ethical considerations in the investigation of the sociocultural approach to understanding human behaviour.

The sociocultural approach to behaviour investigates the role of social and cultural influences in shaping thinking and human behaviour. An increasing body of culturally informed research has made cross-cultural psychology as well as cultural psychology a contemporary topic of debate among psychologists working in the field. Theories, concepts and research studies provide the background for a more nuanced understanding of the variety and complexity of human behaviour. This is important in the modern globalized world where issues related to migration and integration are on the rise.

Key figures in the field of modern social psychology have often favoured experimental methods to understand how social context influences behaviours, identities, attitudes and cognitions, however, by studying acculturation in terms of intergroup relations, we can start to understand that the same processes may be seen in the interaction between cultural groups. Social and cultural psychologists are now also using qualitative research methods in order to get a better understanding of intergroup relations as well as the process of acculturation.

Topic	Content	Guidance
The individual and the group	**Social identity theory** *Social identity theory refers to the way someone thinks about themselves and evaluates themselves in relation to groups. Social identity theory posits that a person's sense of who they are is based on their membership of social groups.* **Social cognitive theory** *Social cognitive theory suggests behaviour is modelled by other members of a group and acquired through observation or imitation based on consequences of a behaviour.* **Stereotypes** *A stereotype is a generalized and rather fixed way of thinking about a group of people.*	**Social cognitive theory** *Modelling and observational learning can be explained using one or more examples.* **In-group and out-group** *This refers to groups with which an individual identifies (in-group) or does not identify with (out-group).* **Conformity and/or compliance** *The presence of others can lead to changes in beliefs and behaviours resulting in conformity and/or compliance to perceived norms, rules and regulations.* **Self-efficacy** *Self-efficacy is part of social cognitive theory and relates to an individual's perception of the possibility of success in a given area based on previous experiences.* **Reciprocal determinism** *Individuals are influenced by the environment but also influence the environment. This means that*

| | | | *society and culture can influence individuals but individuals can influence society and culture, resulting in emergent properties such as new societal and cultural norms.* |

Socialization

The concept of socialization is the process of providing the individual with the skills, habits and norms necessary for participating within their own society.

Social/cultural learning

Learning takes place within a social/cultural context and can occur through observation (modelling) or direct instruction. Individuals gradually internalize social and cultural norms and values to guide them in the interaction with other people. Internalization is the process of acceptance of a set of norms and values established by influential people or groups.

Social cognition

This refers to how people process information about the world including other humans based on cognitive elements such as schemas, attributions, and stereotypes. Modern research into social cognition sometimes includes brain imaging (social cognitive neuroscience). This is also relevant to cultural cognition.

Stereotypes

Examples of stereotypes influencing behaviour could be prejudice and discrimination. The theory of stereotype threat indicates that internalized stereotypes could influence an individual's self-perception and behaviour in negative ways.

Topic	Content	Guidance
Cultural origins of behaviour and cognition	**Culture and its influence on behaviour and cognition** *Cultures are made up of a set of attitudes, behaviours, and symbols shared by a large group of people, and usually communicated from one generation to the next. Cultural groups are characterized by different norms and conventions.* **Cultural dimensions** *Cultural dimensions refer to the values of members of a society living within a particular culture. They include:* • individualism/collectivism • uncertainty avoidance • power/distance • masculinity/femininity • long term/short term • time orientation • indulgence/restraint.	**Culture and cultural norms** *There is a distinction between surface and deep culture. Surface culture refers to the behaviours, customs, traditions and words of a culture that can easily be observed. Deep culture refers to the beliefs, values, thought processes and assumptions of a culture that may be more easily understood by members of that culture but may be less accessible to members of other cultures.* **Cultural dimensions** *One or more of the cultural dimensions could be used to illustrate the concept of cultural dimensions.*

Topic	Content	Guidance
Cultural influences on individual attitudes, identity and behaviours	**Enculturation** *Enculturation is the process by which people learn the necessary and appropriate skills and norms in the context of their culture.* **Acculturation** *People may change as a result of contact with other cultures in order to assimilate with a new culture.*	**Enculturation and acculturation** *The effect of enculturation and acculturation on human cognition and behaviour can be examined using one or more examples.* **Universalism/relativism** *There are different theoretical perspectives when studying culture. A universalist perspective assumes that psychological mechanisms are largely the same across cultural groups, while behaviours and experiences can differ substantially. A relativist perspective would be that psychological processes are so different that they cannot be compared across cultural groups.*

		Emic and etic perspectives
		Cultures are studied in different ways by researchers—a culture can be studied by an insider (emic) or by an outsider (etic).
		Both emic or insider analysis and etic or outsider analysis of a culture have contributed to cultural understanding.
		Factors underlying cultural change
		Factors could include modernization, education, affluence and geographic mobility.

HL only	**The influence of globalization on individual attitudes, identities and behaviour**
The influence of globalization on individual attitudes, identities and behaviour	For all three topics in the sociocultural approach, and with reference to research studies, HL students should study the following. • How globalization may influence attitudes, identities and behaviour. • The effect of the interaction of local and global influences on behaviour. • Methods used to study the influence of globalization on behaviour.

Approaches to researching behaviour

The study of psychology is evidence based and has evolved through a variety of different research approaches, both qualitative and quantitative. As students are exposed to research it is important that they understand the advantages and limitations of different approaches in order to critically evaluate the contribution of research studies to the understanding of human behaviour. Asking questions, challenging assumptions and critically assessing the methods used by researchers are integral skills in the study of psychology. These skills are assessed in criteria D (critical thinking) of essay responses in paper 1 section B and paper 2, and they apply to both SL and HL students.

An understanding of approaches to research is also important for the internal assessment task in order to design, conduct, analyse, draw conclusions and evaluate an experiment. This applies to both SL and HL students.

Only HL students will be directly assessed on their understanding of approaches to research in paper 3.

Research methods

Essentially there are two approaches to research: qualitative and quantitative. There is no hierarchy to the approaches. The method chosen will depend on the aims and objectives of an investigation. No method is perfect in itself and all methods have their individual strengths and limitations. A researcher will choose the method or methods that are most suitable for a specific research study.

Approaches to research in psychology may be reductionist or holistic. As behaviour is often the result of complex social, cultural, cognitive as well as biological interactions, a combination of approaches to researching behaviour is not only inevitable, but desirable.

Qualitative	Quantitative
Qualitative research *Qualitative research is exploratory and used to gain an insight into psychological phenomena of interest. Further research into the topic may well include quantitative studies with more data.*	**Experiments** *Experiments are designed with one clear Independent Variable and a Dependent Variable. All other factors that could affect the Dependent Variable are controlled as far as possible.* *The Independent Variable may be graduated, resulting in a range of conditions on a scale. Alternatively there may be only two conditions for the Independent Variable: one is the control, the other the test condition. This is a simple experiment.*
Case studies *A case study is a detailed analysis over time of an area of interest (a case) to produce context-dependent knowledge. A case study could also be an in-depth study of an individual.*	
Naturalistic observations *These are observations of naturally occurring behaviour in a natural setting. Several different recording techniques can be used but field notes are an important part of the data. Observations may be participant or non-participant observations. The ethical implications of covert observations need to be justified.*	**Field experiments** *The researcher manipulates the Independent Variable but conducts the experiment in a real-life environment. As a result extraneous variables cannot be controlled.* **Quasi-experiments** *In the above experiments participants are randomly assigned to a condition on the Independent Variable. In quasi-experiments participants are grouped based on a characteristic of interest, such as gender, ethnicity, or scores on a depression scale.*
Interviews *Qualitative interviews include unstructured, semi-structured and focus group interviews. These are used to gain an insight into people's thoughts, opinions and feelings from their own point of view.*	*Natural experiments* *In a natural experiment researchers find naturally occurring variables and study them.*
Qualitative interviews may be followed by surveys (a quantitative method) to collect data from a representative sample so that the findings can be generalized to a larger population. This could, for example, be a useful way to explore a psychological phenomenon in a case study.	**Correlations research** *This has a focus on two variables, however, these are not termed Independent and Dependent Variables as the hypothesis is not based on a potential cause and effect, instead they are referred to as co-variables.*

Elements of researching behaviour

Research designs

Common designs include the following.

Matched pair designs randomly assign one of a pair to either the control or the experimental group. Researchers may match individuals on specific characteristics, such as ethnicity or age. Twin studies are an example of a matched pair design.

The independent samples/independent measures design uses two separate groups of participants. For example, one group of participants is assigned to the control group while the other group is assigned to the experimental or treatment condition.

The repeated measures design exposes participants to each condition making up the Independent Variable.

Hypotheses

A hypothesis is a statement that is testable and falsifiable based on the results of an experiment or observation. The null hypothesis (Ho) is a statement that the treatment had no effect while the alternate hypothesis (H1) is a statement that the treatment will have an effect on the Dependent Variable. One of the hypotheses is rejected and the other accepted depending on the outcome of the investigation.

Independent and Dependent Variables

The Independent Variable is the factor that the experimenter manipulates.

The Dependent Variable is the measurement generated by the manipulation of the Independent Variable.

Sampling technique

This involves selecting participants for a study. The following are common techniques.

Random sampling is the process where every member in the target population has an equal chance of being selected.

Convenience/opportunity sampling is the process of selecting people who are able to participate in the study at a given time.

Volunteer sampling is when individuals choose to participate in the study.

Purposive sampling

Participants are chosen because they possess characteristics salient to the research study.

Snowball sampling

Participants who are already in a study help the researcher to recruit more participants through their social network.

Standardization/control

This refers to eliminating or controlling any factor that could affect the results of the study, apart from the Independent Variable. When and how this is carried out will depend on the method chosen to generate the information needed.

Ethical considerations

These are paramount in any investigation of any kind in psychology. Please see the separate sections of the guide and teacher support material for more information on ethical considerations in psychology.

Analysing data

Data presentation

Raw data is the data collected from the investigation. This is then processed in a variety of ways and displayed so that possible trends in the results can be seen.

Inductive content analysis

This is used in qualitative research to determine the meaning or purpose of data as it appears in the transcript or field notes. The analysis of the transcript or field notes involves coding and categorizing data and organizing them into a hierarchy of themes.

Statistics

Descriptive statistics describe the spread and range of the data.

Inferential statistics attempts to highlight relationships and trends in the data.

Please see the section "Mathematical analysis in the internal assessment" in the teacher support material.

Evaluating research

Reliability and validity

Reliability is the consistency of a study in terms of the extent to which a test or measure produces the same results in repeated trials.

Validity is the degree to which the results accurately reflect what the research is measuring. There are two forms:

External validity is the extent to which the results of a study can be generalized or transferred to another sample or context.

Internal validity refers to the rigour of the study and the extent to which the researcher took alternative explanations into account.

Credibility

This term is used in qualitative research to indicate whether or not the findings of the study are congruent with the participants' perceptions and experiences.

Bias

Bias refers to factors that may affect the results of the study.

The following are common biases.

Researcher bias is when the researcher acts differently towards participants, which may influence or alter the participant's behaviour. In qualitative research, the researcher must assess personal biases in relation to the study (for example, topic, choice of participants and method) and should apply reflexivity to control for this.

Participant bias, or demand characteristics, is when participants act according to how the researcher may want them to act, for example, due to the social desirability effect.

Sampling bias occurs when the sample is not representative of the target population, whether the sample is based on selection criteria (qualitative research) or probability sampling (quantitative research).

Drawing conclusions

Correlation and causation

It is tempting to conclude that correlated data is an indication of causation. Although it may indeed be the case, it is good practice to approach a definitive conclusion with caution. Causality itself can take a variety of forms.

Replication

This is the degree to which the study can be repeated by the same or different researchers and achieve comparable results.

Generalization for quantitative research

This is based on probability sampling and the results are applicable to the whole target population.

Transferability for qualitative research

Findings from a study can be transferred to settings and/or populations outside the study only if the findings of a particular study are corroborated by findings of similar studies (for example, in multiple case studies).

Triangulation

Triangulation is an approach used to ensure enough evidence is available to make a valid claim about the results of a study.

Methodological triangulation tests a theory or a psychological phenomenon using different methods of inquiry. Data from a variety of methods (survey, interview, case study, experiments) is used to help validate the results of a study.

There are four options covering areas of applied psychology:

• abnormal psychology

• developmental psychology

• health psychology

• psychology of human relationships.

SL students study one option, while HL students study two.

Whereas the core provides a general overview, the options allow students to study a specialized area of psychology to apply their learning. What is learned in the core forms the foundation for the learning in the options. The options provide the opportunity to integrate learning in an applied context. In addition, the options provide the opportunity to explore the different approaches taken in research and highlight the ethical considerations and sensitivities pertinent to a specific line of inquiry.

The options will be assessed in paper 2. SL students choose one essay, while HL students choose two essays, one from each of the options they have studied.

The essay titles for paper 2 will only use command terms that correspond to assessment objective 3. These are:

Contrast	Give an account of the differences between two (or more) items or situations, referring to both (all) of them throughout.
Discuss	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.
Evaluate	Make an appraisal by weighing up the strengths and limitations.
To what extent	Consider the merits or otherwise of an argument or concept. Opinions and conclusions should be presented clearly and supported with appropriate evidence and sound argument.

Each option is divided into three topics. For each option, there will be three essay titles to choose from, one for each topic in the option.

Abnormal psychology

Abnormal psychology focuses on the diagnosis, explanation, and treatment of abnormal behaviour. The three topics for this option are:

• factors influencing diagnosis

• etiology of abnormal psychology

• treatment of disorders.

Each of these topics should draw on what has been learned in the biological, cognitive and sociocultural approaches to behaviour where appropriate. In addition, students should have the opportunity to explore the different approaches taken in research and should be made aware of the ethical considerations and the sensitivity required in a discussion of this subject. There is no clear definition of what constitutes normal

behaviour and, by the same token, what constitutes abnormal behaviour. Concepts of normal and abnormal change over time and are influenced by such factors as clinical biases, social norms, gender, culture and socio-economic status. An appreciation of this is fundamental to this option. It is an important consideration in diagnosis and in decisions on the treatment of disorders as well as when considering the factors that cause abnormal behaviour.

In discussing the topics students may look at several disorders or focus on a single disorder. Both are acceptable approaches to the content and have the same potential to score well in assessment. The disorders chosen to explain and develop the topics should come from the following categories:

- anxiety disorders

- depressive disorders

- obsessive compulsive disorder

- trauma and stress related disorders

- eating disorders.

Topic	Content	Guidance
Factors influencing diagnosis	Normality versus abnormality Classification systems The role of clinical biases in diagnosis Validity and reliability of diagnosis	The integration of biological, cognitive, sociocultural approaches to understanding behaviour Approaches to research Ethical considerations
Etiology of abnormal psychology	Explanations for disorders Prevalence rates and disorders	
Treatment of disorders	Biological treatments Psychological treatments The role of culture in treatment Assessing the effectiveness of treatment(s)	

Developmental psychology

Developmental psychology is the study of how and why people's behaviour and thinking changes over time. The three topics in this option are:

- influences on cognitive and social development

- developing an identity

- developing as a learner.

Knowledge about the influence of biological, social and cultural factors in the development of an individual is helpful not only for families, but also in childcare and education to create opportunities for children and young people all over the world, so each of these topics should draw on what has been learned in the biological, cognitive and sociocultural approaches to behaviour where appropriate. In addition, students should have

the opportunity to explore the different approaches taken in research and should be made aware of the ethical considerations and the sensitivity required in a discussion of this subject.

Developmental psychology focuses on how development can be supported or undermined. It is important to gain an understanding of the extent to which early experience may influence later development and if there

Topic	Content	Guidance
Influences on cognitive and social development	Role of peers and play Childhood trauma and resilience Poverty/socio-economic status	The integration of biological, cognitive, sociocultural approaches to understanding behaviour
Developing an identity	Attachment Gender identity and social roles Development of empathy and theory of mind	Approaches to research Ethical considerations
Developing as a learner	Cognitive development Brain development	

are critical periods in development. Ideas centred around resilience are of relevance in this option and may help explain why some people are more affected by their experiences than others.

Health psychology

Many health issues are the result of lifestyle, either imposed on individuals or chosen by individuals, and often despite well-publicised risks. An understanding of health psychology is important in the development of prevention strategies and fosters a more positive perception of healthy choices. The three topics in this option are:

- determinants of health

- health problems

- promoting health.

Each of these topics should use the learning from the biological, cognitive and sociocultural approaches to behaviour where appropriate. In addition, students should have the opportunity to explore the different

approaches taken in the research and should be made aware of the ethical considerations and the sensitivity required in a discussion of this subject.

It is important for health psychologists to take into account differences in attitudes towards health-related behaviour as well as variations in the incidence of health problems when trying to help individuals or consider ways to promote health. In addition, factors such as lifestyle and social context may influence health and illness, making one of the goals of health psychology to promote an understanding of behaviour that leads to a healthier lifestyle.

In discussing the issues students may look at several health-related phenomena or focus on a single health issue. Both are acceptable approaches to the content and have the same potential to score well in assessment. The topics being studied in this option should come from one or more of the following:

- stress

- addiction

- obesity

- chronic pain

- sexual health.

Topic	Content	Guidance
Determinants of health	Biopsychosocial model of health and well-being Dispositional factors and health beliefs Risk and protective factors	The integration of biological, cognitive, sociocultural approaches to understanding behaviour
Health problems	Explanations of health problem(s) Prevalence rates of health problem(s)	Approaches to research Ethical considerations
Promoting health	Health promotion Effectiveness of health promotion programmes	

Psychology of human relationships

Humans are social animals dependent on others for their well-being. This social psychology option focuses on human relationships between individuals in personal relationships or in groups. The three topics in this option are:

- personal relationships

- group dynamics

- social responsibility.

Each of these topics should use the learning from the biological, cognitive and sociocultural approaches to behaviour where appropriate. In addition, students should have the opportunity to explore the different approaches taken in the research and should be made aware of the ethical considerations and the sensitivity required in a discussion of this subject.

Studying human relationships has its challenges and it is tempting to oversimplify complex social and psychological issues. One approach to the study of human relationships concentrates on the role of hormones and genetics. However, this gives a limited understanding of how relationships develop. Cognitive theorists have also contributed to the understanding of relationships by applying schema theory, while social psychologists have focused on beliefs, social identity theory and the role of culture. However, key goals of social psychologists are to understand the complexities of relationships, improve interpersonal relationships, promote social responsibility and reduce violence. As such, in the research on human relationships, credibility and trustworthiness of a study as well as ethical considerations are important throughout.

Topic	Content	Guidance
Personal relationships	Formation of personal relationships Role of communication Explanations for why relationships change or end	The integration of biological, cognitive, sociocultural approaches to understanding behaviour Approaches to research Ethical considerations
Group dynamics	Co-operation and competition Prejudice and discrimination Origins of conflict and conflict resolution	
Social responsibility	By-standerism Prosocial behaviour Promoting prosocial behaviour	

General

Assessment is an integral part of teaching and learning. The most important aims of assessment in the Diploma Programme are that it should support curricular goals and encourage appropriate student learning. Both external and internal assessments are used in the Diploma Programme. IB examiners mark work produced for external assessment, while work produced for internal assessment is marked by teachers and externally moderated by the IB.

There are two types of assessment identified by the IB.

- Formative assessment informs both teaching and learning. It is concerned with providing accurate and helpful feedback to students and teachers on the kind of learning taking place and the nature of students' strengths and weaknesses in order to help develop students' understanding and capabilities. Formative assessment can also help to improve teaching quality, as it can provide information to monitor progress towards meeting the course aims and objectives.

- Summative assessment gives an overview of previous learning and is concerned with measuring student achievement.

The Diploma Programme primarily focuses on summative assessment designed to record student achievement at, or towards the end of, the course of study. However, many of the assessment instruments can also be used formatively during the course of teaching and learning, and teachers are encouraged to do this. A comprehensive assessment plan is viewed as being integral with teaching, learning and course organization. For further information, see the IB *Programme standards and practices* document.

The approach to assessment used by the IB is criterion-related, not norm-referenced. This approach to assessment judges students' work by their performance in relation to identified levels of attainment, and not in relation to the work of other students. For further information on assessment within the Diploma Programme please refer to the publication *Diploma Programme assessment: Principles and practice*.

To support teachers in the planning, delivery and assessment of the Diploma Programme courses, a variety of resources can be found on the OCC or purchased from the IB store (http://store.ibo.org). Additional publications such as specimen papers and markschemes, teacher support materials, subject reports and grade descriptors can also be found on the OCC. Past examination papers as well as markschemes can be purchased from the IB store.

Methods of assessment

The IB uses several methods to assess work produced by students.

Assessment criteria

Assessment criteria are used when the assessment task is open-ended. Each criterion concentrates on a particular skill that students are expected to demonstrate. An assessment objective describes what students should be able to do, and assessment criteria describe how well they should be able to do it. Using assessment criteria allows discrimination between different answers and encourages a variety of responses. Each criterion comprises a set of hierarchically ordered level descriptors. Each level descriptor is worth one or more marks. Each criterion is applied independently using a best-fit model. The maximum marks for each criterion may differ according to the criterion's importance. The marks awarded for each criterion are added together to give the total mark for the piece of work.

Markbands

Markbands are a comprehensive statement of expected performance against which responses are judged. They represent a single holistic criterion divided into level descriptors. Each level descriptor corresponds to

a range of marks to differentiate student performance. A best-fit approach is used to ascertain which particular mark to use from the possible range for each level descriptor.

Analytic markschemes

Analytic markschemes are prepared for those examination questions that expect a particular kind of response and/or a given final answer from students. They give detailed instructions to examiners on how to break down the total mark for each question for different parts of the response.

Marking notes

For some assessment components marked using assessment criteria, marking notes are provided. Marking notes give guidance on how to apply assessment criteria to the particular requirements of a question.

Inclusive assessment arrangements

Inclusive assessment arrangements are available for candidates with assessment access requirements. These arrangements enable candidates with diverse needs to access the examinations and demonstrate their knowledge and understanding of the constructs being assessed.

The IB document *Candidates with assessment access requirements* provides details on all the inclusive assessment arrangements available to candidates with learning support requirements. The IB document *Learning diversity and inclusion in IB programmes* outlines the position of the IB with regard to candidates with diverse learning needs in the IB programmes. For candidates affected by adverse circumstances, the IB documents *General regulations: Diploma Programme* and the *Handbook of procedures for the Diploma Programme* provide details on access consideration.

Responsibilities of the school

The school is required to ensure that equal access arrangements and reasonable adjustments are provided to candidates with learning support requirements that are in line with the IB documents *Candidates with assessment access requirements* and *Learning diversity and inclusion in IB programmes*.

Assessment outline—SL

Assessment component	Weighting
External assessment (3 hours)	**75%**
Paper 1 (2 hours) Section A: Three short-answer questions on the core approaches to psychology (27 marks) Section B: One essay from a choice of three on the biological, cognitive and sociocultural approaches to behaviour (22 marks) (Total 49 marks)	50%
Paper 2 (1 hour) One question from a choice of three on one option (22 marks)	25%
Internal assessment (20 hours) This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. **Experimental study** A report on an experimental study undertaken by the student (22 marks)	**25%**

Assessment outline—HL

Assessment component	Weighting
External assessment (5 hours)	**80%**
Paper 1 (2 hours) Section A: Three short-answer questions on the core approaches to psychology (27 marks) Section B: One essay from a choice of three on the biological, cognitive and sociocultural approaches to behaviour. **One, two or all** of the essays will reference the additional HL topic (22 marks) (Total 49 marks)	40%
Paper 2 (2 hours) Two questions; one from a choice of three on each of two options (Total 44 marks)	20%
Paper 3 (1 hour) Three short-answer questions from a list of six static questions on approaches to research (24 marks)	20%
Internal assessment (20 hours) This component is internally assessed by the teacher and externally moderated by the IB at the end of the course. **Experimental study** A report on an experimental study undertaken by the student (22 marks)	**20%**

Paper 1 section A and paper 3 question 3 are assessed using markbands.

Paper 1 section B and paper 2 are assessed using assessment criteria.

The markbands and assessment criteria are published in this guide.

In addition, questions 1 and 2 in paper 3 will be assessed by an analytical markscheme in line with the demands of the question. The markschemes are specific to each examination.

External assessment criteria—SL

Paper 1

Section A

Paper 1 section A consists of three short-answer questions using AO1 and AO2 command terms. All three questions are compulsory. Each question is marked out of 9 marks using the rubric below, for a total of 27 marks.

Markband	Level descriptor
0	The answer does not reach a standard described by the descriptors below.
1–3	The response is of limited relevance to or only rephrases the question. Knowledge and understanding is mostly inaccurate or not relevant to the question. The research supporting the response is mostly not relevant to the question and if relevant only listed.
4–6	The response is relevant to the question, but does not meet the command term requirements. Knowledge and understanding is accurate but limited. The response is supported by appropriate research which is described.
7–9	The response is fully focused on the question and meets the command term requirements. Knowledge and understanding is accurate and addresses the main topics/problems identified in the question. The response is supported by appropriate research which is described and explicitly linked to the question.

Section B

Paper 1 section B consists of a single essay from a choice of three. The essay is marked out of 22 marks. AO3 command terms will be used in the essay questions. The essays will be assessed using the rubric below.

Essay marking rubric (total 22 marks)

Criterion A: Focus on the question (2 marks)

To understand the requirements of the question students must identify the problem or issue being raised by the question. Students may simply identify the problem by restating the question or breaking down the question. Students who go beyond this by **explaining** the problem are showing that they understand the issues or problems.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	Identifies the problem/issue raised in the question.
2	Explains the problem/issue raised in the question.

Criterion B: Knowledge and understanding (6 marks)

This criterion rewards students for demonstrating their knowledge and understanding of specific areas of psychology. It is important to credit **relevant** knowledge and understanding that is **targeted** at addressing the question and explained in sufficient detail.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The response demonstrates limited relevant knowledge and understanding.
	Psychological terminology is used but with errors that hamper understanding.
3–4	The response demonstrates relevant knowledge and understanding but lacks detail.
	Psychological terminology is used but with errors that do not hamper understanding.
5–6	The response demonstrates relevant, detailed knowledge and understanding.
	Psychological terminology is used appropriately.

Criterion C: Use of research to support answer (6 marks)

Psychology is evidence based so it is expected that students will use their knowledge of research to support their argument. There is no prescription as to which or how many pieces of research are appropriate for their response. As such it becomes important that the research selected is **relevant** and useful in **supporting** the response. One piece of research that makes the points relevant to the answer is better than several pieces that repeat the same point over and over.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	Limited relevant psychological research is used in the response.
	Research selected serves to repeat points already made.
3–4	Relevant psychological research is used in support of the response and is partly explained.
	Research selected partially develops the argument.
5–6	Relevant psychological research is used in support of the response and is thoroughly explained.
	Research selected is effectively used to develop the argument.

Criterion D: Critical thinking (6 marks)

This criterion credits students who demonstrate an inquiring and reflective attitude to their understanding of psychology. There are a number of areas where students may demonstrate critical thinking on the knowledge and understanding used in their responses and the research used to support that knowledge and understanding. The areas of critical thinking are:

- research design and methodologies

- triangulation

- assumptions and biases

- contradictory evidence or alternative theories or explanations

- areas of uncertainty.

These areas are not hierarchical and not all areas will be relevant in a response. In addition, students could demonstrate a very limited critique of methodologies, for example, and a well-developed evaluation of areas of uncertainty in the same response. As a result a holistic judgment of their achievement in this criterion should be made when awarding marks.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	There is limited critical thinking and the response is mainly descriptive. Evaluation or discussion, if present, is superficial.
3–4	The response contains critical thinking, but lacks development. Evaluation or discussion of most relevant areas is attempted but is not developed.
5–6	The response consistently demonstrates well-developed critical thinking. Evaluation or discussion of relevant areas is consistently well developed.

Criterion E: Clarity and organization (2 marks)

This criterion credits students for presenting their response in a clear and organized manner. A good response would require no re-reading to understand the points made or the train of thought underpinning the argument.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	The answer demonstrates some organization and clarity, but this is not sustained throughout the response.
2	The answer demonstrates organization and clarity throughout the response.

Paper 2

Paper 2 consists of one essay question for the option studied. Each option will have a choice of three essays. All essays will use an AO3 command term. The essay is marked out of 22 marks. The essay will be assessed using the rubric shown below.

Essay marking rubric (total 22 marks)

Criterion A: Focus on the question (2 marks)

To understand the requirements of the question students must identify the problem or issue being raised by the question. Students may simply identify the problem by restating the question or breaking down the question. Students who go beyond this by **explaining** the problem are showing that they understand the issues or problems.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	Identifies the problem/issue raised in the question.
2	Explains the problem/issue raised in the question.

Criterion B: Knowledge and understanding (6 marks)

This criterion rewards students for demonstrating their knowledge and understanding of specific areas of psychology. It is important to credit **relevant** knowledge and understanding that is **targeted** at addressing the question and explained in sufficient detail.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The response demonstrates limited relevant knowledge and understanding. Psychological terminology is used but with errors that hamper understanding.
3–4	The response demonstrates relevant knowledge and understanding but lacks detail. Psychological terminology is used but with errors that do not hamper understanding.
5–6	The response demonstrates relevant, detailed knowledge and understanding. Psychological terminology is used appropriately.

Criterion C: Use of research to support answer (6 marks)

Psychology is evidence-based, so it is expected that students will use their knowledge of research to support their argument. There is no prescription as to which or how many pieces of research are appropriate for their response. As such it becomes important that the research selected is **relevant** and useful in **supporting** the response. One piece of research that makes the points relevant to the answer is better than several pieces that repeat the same point over and over.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	Limited relevant psychological research is used in the response. Research selected serves to repeat points already made.
3–4	Relevant psychological research is used in support of the response and is partly explained. Research selected partially develops the argument.
5–6	Relevant psychological research is used in support of the response and is thoroughly explained. Research selected is effectively used to develop the argument.

Criterion D: Critical thinking (6 marks)

This criterion credits students who demonstrate an inquiring and reflective attitude to their understanding of psychology. There are a number of areas where students may demonstrate critical thinking on the knowledge and understanding used in their responses and the research used to support that knowledge and understanding. The areas of critical thinking are:

• research design and methodologies

• triangulation

• assumptions and biases

• contradictory evidence or alternative theories or explanations

• areas of uncertainty.

These areas are not hierarchical and not all areas will be relevant in a response. In addition, students could demonstrate a very limited critique of methodologies, for example, and a well-developed evaluation of areas of uncertainty in the same response. As a result a holistic judgment of their achievement in this criterion should be made when awarding marks.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	There is limited critical thinking and the response is mainly descriptive. Evaluation or discussion, if present, is superficial.

3–4	The response contains critical thinking, but lacks development.
	Evaluation or discussion of most relevant areas is attempted but is not developed.
5–6	The response consistently demonstrates well-developed critical thinking.
	Evaluation or discussion of relevant areas is consistently well developed.

Criterion E: Clarity and organization (2 marks)

This criterion credits students for presenting their response in a clear and organized manner. A good response would require no re-reading to understand the points made or the train of thought underpinning the argument.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	The answer demonstrates some organization and clarity, but this is not sustained throughout the response.
2	The answer demonstrates organization and clarity throughout the response.

External assessment criteria—HL

Paper 1

Section A

Paper 1 section A consists of three short-answer questions using AO1 and AO2 command terms. All three questions are compulsory. Each question is marked out of 9 marks using the rubric below, for a total of 27 marks.

Markband	Level descriptor
0	The answer does not reach a standard described by the descriptors below.
1–3	The response is of limited relevance to or only rephrases the question.
	Knowledge and understanding is mostly inaccurate or not relevant to the question.
	The research supporting the response is mostly not relevant to the question and if relevant only listed.
4–6	The response is relevant to the question, but does not meet the command term requirements.
	Knowledge and understanding is accurate but limited.
	The response is supported by appropriate research which is described.
7–9	The response is fully focused on the question and meets the command term requirements.
	Knowledge and understanding is accurate and addresses the main topics/problems identified in the question.
	The response is supported by appropriate research which is described and explicitly linked to the question.

Section B

Paper 1 section B consists of a single essay from a choice of three. One, two or all of the essays will reference the additional HL topic. The essay is marked out of 22 marks. AO3 command terms will be used in the essay questions. The essays will be assessed using the rubric below.

Essay marking rubric (Total 22 marks)

Criterion A: Focus on the question (2 marks)

To understand the requirements of the question students must identify the problem or issue being raised by the question. Students may simply identify the problem by restating the question or breaking down the question. Students who go beyond this by **explaining** the problem are showing that they understand the issues or problems.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	Identifies the problem/issue raised in the question.
2	Explains the problem/issue raised in the question.

Criterion B: Knowledge and understanding (6 marks)

This criterion rewards students for demonstrating their knowledge and understanding of specific areas of psychology. It is important to credit **relevant** knowledge and understanding that is **targeted** at addressing the question and explained in sufficient detail.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The response demonstrates limited relevant knowledge and understanding.
	Psychological terminology is used but with errors that hamper understanding.
3–4	The response demonstrates relevant knowledge and understanding but lacks detail.
	Psychological terminology is used but with errors that do not hamper understanding.
5–6	The response demonstrates relevant, detailed knowledge and understanding.
	Psychological terminology is used appropriately.

Criterion C: Use of research to support answer (6 marks)

Psychology is evidence based so it is expected that students will use their knowledge of research to support their argument. There is no prescription as to which or how many pieces of research are appropriate for their response. As such it becomes important that the research selected is **relevant** and useful in **supporting** the response. One piece of research that makes the points relevant to the answer is better than several pieces that repeat the same point over and over.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	Limited relevant psychological research is used in the response.
	Research selected serves to repeat points already made.
3–4	Relevant psychological research is used in support of the response and is partly explained.
	Research selected partially develops the argument.
5–6	Relevant psychological research is used in support of the response and is thoroughly explained.
	Research selected is effectively used to develop the argument.

Criterion D: Critical thinking (6 marks)

This criterion credits students who demonstrate an inquiring and reflective attitude to their understanding of psychology. There are a number of areas where students may demonstrate critical thinking about the knowledge and understanding used in their responses and the research used to support that knowledge and understanding. The areas of critical thinking are:

• research design and methodologies

• triangulation

• assumptions and biases

• contradictory evidence or alternative theories or explanations

• areas of uncertainty.

These areas are not hierarchical and not all areas will be relevant in a response. In addition, students could demonstrate a very limited critique of methodologies, for example, and a well-developed evaluation of areas of uncertainty in the same response. As a result a holistic judgment of their achievement in this criterion should be made when awarding marks.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	There is limited critical thinking and the response is mainly descriptive.
	Evaluation or discussion, if present, is superficial.

3–4	The response contains critical thinking, but lacks development.
	Evaluation or discussion of most relevant areas is attempted but is not developed.
5–6	The response consistently demonstrates well-developed critical thinking.
	Evaluation or discussion of relevant areas is consistently well developed.

Criter**ion E: Clarity and organization** (2 marks)

This criterion credits students for presenting their response in a clear and organized manner. A good response would require no re-reading to understand the points made or the train of thought underpinning the argument.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	The answer demonstrates some organization and clarity, but this is not sustained throughout the response.
2	The answer demonstrates organization and clarity throughout the response.

Paper 2

Paper 2 consists of two essay questions, one for each option studied. Each option will have a choice of three essays. All essays will use an AO3 command term. The essays are marked out of 22 marks. Each essay will be assessed using the rubric shown below.

Essay marking rubric (total 22 marks)

Criterion A: Focus on the question (2 marks)

To understand the requirements of the question students must identify the problem or issue being raised by the question. Students may simply identify the problem by restating the question or breaking down the question. Students who go beyond this by **explaining** the problem are showing that they understand the issues or problems.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	Identifies the problem/issue raised in the question.
2	Explains the problem/issue raised in the question.

Criterion B: Knowledge and understanding (6 marks)

This criterion rewards students for demonstrating their knowledge and understanding of specific areas of psychology. It is important to credit **relevant** knowledge and understanding that is **targeted** at addressing the question and explained in sufficient detail.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The response demonstrates limited relevant knowledge and understanding.
	Psychological terminology is used but with errors that hamper understanding.
3–4	The response demonstrates relevant knowledge and understanding but lacks detail.
	Psychological terminology is used but with errors that do not hamper understanding.
5–6	The response demonstrates relevant, detailed knowledge and understanding.
	Psychological terminology is used appropriately.

Criterion C: Use of research to support answer (6 marks)

Psychology is evidence based so it is expected that students will use their knowledge of research to support their argument. There is no prescription as to which or how many pieces of research are appropriate for their response. As such it becomes important that the research selected is **relevant** and useful in **supporting** the response. One piece of research that makes the points relevant to the answer is better than several pieces that repeat the same point over and over.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	Limited relevant psychological research is used in the response. Research selected serves to repeat points already made.
3–4	Relevant psychological research is used in support of the response and is partly explained. Research selected partially develops the argument.
5–6	Relevant psychological research is used in support of the response and is thoroughly explained. Research selected is effectively used to develop the argument.

Criterion D: Critical thinking (6 marks)

This criterion credits students who demonstrate an inquiring and reflective attitude to their understanding of psychology. There are a number of areas where students may demonstrate critical thinking about the knowledge and understanding used in their responses and the research used to support that knowledge and understanding. The areas of critical thinking are:

•   research design and methodologies

•   triangulation

•   assumptions and biases

•   contradictory evidence or alternative theories or explanations

•   areas of uncertainty.

These areas are not hierarchical and not all areas will be relevant in a response. In addition, students could demonstrate a very limited critique of methodologies, for example, and a well-developed evaluation of areas of uncertainty in the same response. As a result a holistic judgment of their achievement in this criterion should be made when awarding marks.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	There is limited critical thinking and the response is mainly descriptive. Evaluation or discussion, if present, is superficial.
3–4	The response contains critical thinking, but lacks development. Evaluation or discussion of most relevant areas is attempted but is not developed.
5–6	The response consistently demonstrates well developed critical thinking. Evaluation or discussion of relevant areas is consistently well developed.

Criterion E: Clarity and organization (2 marks)

This criterion credits students for presenting their response in a clear and organized manner. A good response would require no re-reading to understand the points made or the train of thought underpinning the argument.

Mark	Level descriptor
0	Does not reach the standard described by the descriptors below.
1	The answer demonstrates some organization and clarity, but this is not sustained throughout the response.
2	The answer demonstrates organization and clarity throughout the response.

Paper 3

Paper 3 assesses the approaches to research in psychology. The paper consists of a research scenario followed by a three short answer questions for a total of 24 marks.

Question 1

Question 1 will consist of **all** of the following questions, for a total of 9 marks. The questions will be assessed using an analytical markscheme.

Questions	Marks
Identify the method used and outline two characteristics of the method.	3
Describe the sampling method used in the study.	3
Suggest an alternative or additional method giving one reason for your choice.	3

Question 2

Question 2 will consist of **one** of the following questions, for a total of 6 marks. The question will be assessed using an analytical markscheme.

Questions	Marks
Describe the ethical considerations that were applied in the study and **explain** if further ethical considerations could be applied.	6
Describe the ethical considerations in reporting the results and **explain** ethical considerations that could be taken into account when applying the findings of the study.	6

Question 3

Question 3 will consist of **one** of the following questions, for a total of 9 marks. The question will be assessed using the rubric below.

Questions	Marks
Discuss the possibility of generalizing the findings of the study.	9
Discuss how a researcher could ensure that the results of the study are credible.	9
Discuss how the researcher in the study could avoid bias.	9

Rubric for question 3

Markband	Level descriptor
0	The answer does not reach a standard described by the descriptors below.
1–3	The question is misunderstood and the central issue is not identified correctly, resulting in a mostly irrelevant argument. The response contains mostly inaccurate references to the approaches to research or these are irrelevant to the question. The reference to the stimulus material relies heavily on direct quotations from the text.
4–6	The question is understood, but only partially answered resulting in an argument of limited scope. The response contains mostly accurate references to approaches to research which are linked explicitly to the question. The response makes appropriate but limited use of the stimulus material.
7–9	The question is understood and answered in a focused and effective manner with an accurate argument that addresses the requirements of the question. The response contains accurate references to approaches to research with regard to the question, describing their strengths and limitations. The response makes effective use of the stimulus material.

Purpose of internal assessment

Internal assessment is an integral part of the course and is compulsory for both SL and HL students. It enables students to demonstrate the application of their skills and knowledge, and to pursue their personal interests without the time limitations and other constraints that are associated with written examinations. The internal assessment should, as far as possible, be woven into normal classroom teaching and not be a separate activity conducted after the course has been taught.

The internal assessment requirements at SL and at HL are the same. Students will investigate a published study, theory or model relevant to their learning in psychology by conducting an experimental investigation and reporting the findings. The requirements will be explained in more detail in the internal assessment details.

Group work

Students are required to work as part of a group to plan and conduct the investigation. The research method, subjects and materials, as well as the operationalization of the Independent and Dependent Variables, will be the result of the group working together. Once the data has been generated the collaboration is complete. Each student will write up the report independently of other group members. The data will be analysed and conclusions drawn independently. Students should not discuss the results with other members of the group. Likewise, the evaluation should be carried out independently. While there will be some similarities (as the students are drawing on the same data), it is important that they are reminded of the requirements for academic honesty and the consequences of academic malpractice. The report must adhere to the ethical guidelines in all aspects.

The group must consist of a minimum of two students and a maximum of four students. SL and HL students may work together. Students may also choose to collaborate virtually with another student or students in other IB World Schools. Alternatively, students may work with another student who is not studying DP psychology. This may be a student studying a psychology course with another provider, or a student studying a related course such as an experimental science or social science course. Students may choose group members who share a common interest or they may join a group and then decide on an area for study within that group.

Assessing group work

Collaboration represents an authentic way of working in the field of research, but as it is difficult to assess a team member's contribution completely objectively, the reporting of the method will be awarded fewer marks than the other sections. A student's evaluation of the method (including protocols, participants and materials) is where a clear understanding of the exploration will be rewarded, as this is carried out independently of the group. It is expected that a student will point out the strengths as well as the limitations of the method as part of their evaluation—a good design will generate as much opportunity for comment as a less effective design, but it is anticipated that a student will only gain the higher marks for their evaluation if they are fully engaged in the thinking behind the design of the investigation.

The difference between collaboration and collusion must be made clear to all students.

Time allocation

Internal assessment is an integral part of the psychology course, contributing 25% to the final assessment at SL and 20% at HL. This weighting should be reflected in the time that is allocated to teaching the knowledge, skills and understanding required to undertake the work, as well as the total time allocated to carry out the work.

It is recommended that a total of approximately 20 hours of teaching time should be allocated to the work for both SL and HL students.

This should include time to:

- explain to students the requirements of the internal assessment task

- review the ethical guidelines for the course

- work on the internal assessment component and ask questions

- collaborate in groups

- consult with the groups (and individual students as necessary)

- review and monitor progress, checking authenticity.

Guidance and authenticity

The report submitted for internal assessment must be the student's own work. However, the teacher should play an important role during both the planning stage and the period when the student is working on the internally assessed work. It is the responsibility of the teacher to ensure that students are familiar with:

- the requirements of the type of work to be internally assessed

- the psychology course ethical guidelines and the IB guidelines on academic honesty

- the assessment criteria—students must understand that the work is being submitted for assessment and must address the criteria effectively.

Teachers and students must discuss the internally assessed work. Students should be encouraged to initiate discussions with the teacher to obtain advice and information, and students must not be penalized for seeking guidance. As part of the learning process, teachers should read and give advice to students on **one** draft of the work. The teacher should provide oral or written advice on how the work could be improved, but not edit the draft. The next version handed to the teacher must be the final version for submission.

Once a student has officially submitted the final version of the work it cannot be retracted. It is the teacher's responsibility to ensure that all students understand the basic meaning and significance of concepts that relate to academic honesty, especially authenticity and intellectual property. The requirement to confirm the authenticity of work applies to the work of all students, not just the sample work that will be submitted to the IB for the purpose of moderation. For further details refer to the IB publications *Academic honesty in the IB educational context*, *Diploma Programme: From principles into practice* and *General regulations: Diploma Programme*.

Authenticity may be checked by discussion with the student on the content of the work, and scrutiny of one or more of the following:

- the student's initial proposal

- the first draft of the written work

- the references cited

- the style of writing compared with other work known to be that of the student

- the analysis of the work by a web-based plagiarism detection service such as www.turnitin.com.

The same piece of work cannot be submitted to meet the requirements of both the internal assessment and the extended essay.

Requirements and recommendations

Approaches to research in the core covers some of the main methods students are likely to encounter during their studies in psychology, however, for the purposes of the internal assessment, students are required to work exclusively using the experimental method.

Choice of topic

The experiment is an opportunity for students to investigate an area of interest to them, to enrich their studies and stimulate their curiosity. The following points will serve as a guide to the choice of topic.

- The topic can be from any area of psychology.

- The theory or model on which the investigation is based must appear in a peer-reviewed publication.

- The link between the study or model used and the students' aims and objectives for their experiment must be made clear.

- The relevance of the experiment, that is the reason for carrying out the experiment, must be made clear.

Approaches to experimentation

The experimental method looks for a relationship between two variables to support a hypothesis of cause and effect. The two variables are:

- the Independent Variable which is the variable manipulated by the experimenters

- the Dependent Variable which is the variable measured

All other factors which could affect the Dependent Variable should be controlled as far as possible. The study used may guide the students towards appropriate controls, but it may be adapted to suit the context in which the students are working.

Approaches to the Independent Variable (IV)

It is important that there is only one Independent Variable in the experiment.

The Independent Variable is the variable that is manipulated by the experimenters. Students should base their choice of the number of conditions and the nature of the conditions on the study used to inform their experiment.

Students may wish to conduct a simple experiment, in which case the Independent Variable would have two conditions.

The study on which the experiment is based may have several conditions for the Independent Variable. Students may choose to replicate all the conditions or choose to simplify the experiment and choose two conditions for their own experiment.

Details of how the Independent Variable is operationalized may also differ from the study. As an example, students may choose different words for a word list, or a different type of music to the study to suit their own circumstances, provided the link between the study and their own experiment remains clear.

Variables that are based upon pre-existing characteristics of the participants are not suitable for the internal assessment. Variables that are not acceptable Independent Variables include, but are not limited to:

- gender (for example, comparing the results of female and male participants)

- age (for example, comparing the performance of 10-year-old participants and 18-year-old participants)

- native language (for example, comparing native French speakers and native Mandarin speakers)

- culture (for example, comparing the results of Afro-Caribbean participants and Swedish participants)

- education level (for example, comparing the performance of students in grade 5 and grade 11)

- socio-economic status (for example, poor participants and rich participants)

- handedness (for example, left-handed and right-handed participants).

While these variables might be of interest to students, they cannot be manipulated within the framework of the internal assessment. If such a variable is defined as the Independent Variable, the experiment will not meet the requirements and will not earn marks.

In addition, experiments involving the following elements are not acceptable and will not earn marks.

- placebos

- ingestion or inhalation (for example, food, drink, smoking, drugs)

- deprivation (for example, sleep, food).

Approaches to the Dependent Variable (DV)

The Dependent Variable is the variable measured. There are a number of approaches here too.

- Students may replicate the operationalization of the Dependent Variable used in the study on which they base their experiment.

- Students may adapt the operationalization of the Dependent Variable to suit their own circumstances or resources. They may, for example, alter the number of measurements taken, the type of measurements taken or use a different Dependent Variable altogether, provided that the link between the study and their own experiment remains clear and can be justified.

In addition, students may choose to alter the method of the study in a variety of different ways to better suit the context in which they are working. Students may for example alter:

- the nature of the participants as the most feasible participants for a school experiment would be other students

- the number of participants involved. The study may have had access to participant numbers that are impossible to replicate in a school. Alternatively, the study may have used a matched pairs design which cannot be replicated in school as there are too few participants to choose from, making matching problematic.

The marking criteria are designed to allow for a degree of flexibility and full marks can be achieved if the variations outlined above are applied. Exemplars of student work and further assistance in conducting the experiment for internal assessment is available in the teacher support material.

Analysis

The data collected should be appropriately displayed. Raw data should be available in an appendix. The data should be analysed in terms of:

- descriptive statistics to highlight the variability and spread of the data

- inferential statistics to draw conclusions about the significance of the data generated in terms of supporting a hypothesis. Cause and effect should be treated with caution and conclusions should be tentative.

The evaluation

The evaluation of the experiment should focus on:

- the limitations of the method—those factors which are likely to have had an influence on the outcome of the experiment but could not have been avoided (human error or accidents and omissions that could easily have been avoided with a little foresight and planning are not acceptable as limitations)

- suggestions for improving the method to generate more data or more effective data in order to arrive at a firmer conclusion. These may be based on the limitations identified or proposed on the basis of a fresh consideration of the experimental design.

Presentation

The following details should be stated in the header of the report.

- Title of the investigation

- IB candidate code (alphanumeric, eg XYZ123)

- IB candidate code for all group members

- Date, month and year of submission

- Number of words

The report should be between 1,800 and 2,200 words in length and consist of the following components:

- Introduction

- Exploration

- Analysis

- Evaluation

- References

    - The references are not assessed but must be included to meet the requirements of honest academic practice. Not attributing ideas of others included in your work amounts to academic misconduct. If academic misconduct is discovered in any work you submit for IB assessment, you will not be awarded a grade for the subject.

The appendices do not count towards the word count but should be kept to a minimum. Appendices should include:

- raw data tables

- print-outs of calculations and/or results from statistics software **or** calculations made for analytical purposes

- consent form pro forma (unfilled)

- copy of standardized instructions and debriefing notes

- supplementary materials.

Ethical guidelines should be adhered to throughout the planning, conducting and reporting of the experimental work for internal assessment.

Using assessment criteria for internal assessment

For internal assessment, a number of assessment criteria have been identified. Each assessment criterion has level descriptors describing specific achievement levels, together with an appropriate range of marks. The level descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.

Teachers must judge the internally assessed work at SL and at HL against the criteria using the level descriptors.

- The same assessment criteria are provided for SL and HL.

- The aim is to find, for each criterion, the descriptor that conveys most accurately the level attained by the student, using the best-fit model. A best-fit approach means that compensation should be made when a piece of work matches different aspects of a criterion at different levels. The mark awarded should be one that most fairly reflects the balance of achievement against the criterion. It is not necessary for every single aspect of a level descriptor to be met for that mark to be awarded.

- When assessing a student's work, teachers should read the level descriptors for each criterion until they reach a descriptor that most appropriately describes the level of the work being assessed. If a piece of work seems to fall between two descriptors, both descriptors should be read again and the one that more appropriately describes the student's work should be chosen.

- Where there are two or more marks available within a level, teachers should award the upper marks if the student's work demonstrates the qualities described to a great extent; the work may be close to achieving marks in the level above. Teachers should award the lower marks if the student's work demonstrates the qualities described to a lesser extent; the work may be close to achieving marks in the level below.

- Only whole numbers should be recorded; partial marks, (fractions and decimals) are not acceptable.

- Teachers should not think in terms of a pass or fail boundary, but should concentrate on identifying the appropriate descriptor for each assessment criterion.

- The highest level descriptors do not imply faultless performance but should be achievable by a student. Teachers should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed.

- A student who attains a high achievement level in relation to one criterion will not necessarily attain high achievement levels in relation to the other criteria. Similarly, a student who attains a low achievement level for one criterion will not necessarily attain low achievement levels for the other criteria. Teachers should not assume that the overall assessment of the students will produce any particular distribution of marks.

- It is recommended that the assessment criteria be made available to students.

Using markbands for internal assessment

For internal assessment, markbands have been identified. Each markband has level descriptors describing specific achievement levels for a piece of work in a holistic fashion, together with an appropriate range of marks. The level descriptors concentrate on positive achievement, although for the lower levels failure to achieve may be included in the description.

Teachers must judge the internally assessed work at SL and at HL using the markband level descriptors.

- The same markbands are provided for SL and HL.

- The aim is to find the descriptor that conveys most accurately the level attained by the student's work, using the best-fit model. A best-fit approach means that compensation should be made when a piece of work matches different aspects of a markband at different levels. The mark awarded should be one that most fairly reflects the balance of achievement against the markband. It is not necessary for every single aspect of a level descriptor to be met for that mark to be awarded.

- When assessing a student's work, teachers should read the level descriptors until they reach a descriptor that most appropriately describes the level of the work being assessed. If a piece of work seems to fall between two descriptors, both descriptors should be read again and the one that more appropriately describes the student's work should be chosen.

- There are a number of marks available within a level; teachers should award the upper marks if the student's work demonstrates the qualities described to a great extent; the work may be close to achieving marks in the level above. Teachers should award the lower marks if the student's work demonstrates the qualities described to a lesser extent; the work may be close to achieving marks in the level below.

- Only whole numbers should be recorded; partial marks (fractions and decimals) are not acceptable.

- Teachers should not think in terms of a pass or fail boundary, but should concentrate on identifying the appropriate level descriptor for each markband.

- The highest level descriptors do not imply faultless performance but should be achievable by a student. Teachers should not hesitate to use the extremes if they are appropriate descriptions of the work being assessed.

- It is recommended that the markbands be made available to students.

Internal assessment criteria SL and HL

The assessment of the internal assessment task is the same for both SL and HL students and uses the following rubric.

I. Introduction (6 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The aim of the investigation is stated but its relevance is not identified. The theory or model upon which the student's investigation is based is identified but the description is incomplete or contains errors. Null and/or research hypotheses are stated, but do not correctly identify the Independent or Dependent Variables.
3–4	The aim of the investigation is stated and its relevance is identified but not explained. The theory or model upon which the student's investigation is based is described but the link to the student's investigation is not explained. The Independent and Dependent Variables are correctly stated in the null or research hypotheses, but not operationalized.
5–6	The aim of the investigation is stated and its relevance is explained. The theory or model upon which the student's investigation is based is described and the link to the student's investigation is explained. The Independent and Dependent Variables are stated and operationalized in the null or research hypotheses.
Marks	Comments

II. Exploration (4 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	The research design is described. The sampling technique is described.

	Characteristics of the participants are described.
	Controlled variables are described.
	The materials used are described.
3–4	The research design is explained.
	The sampling technique is explained.
	The choice of participants is explained.
	Controlled variables are explained.
	The choice of materials is explained.
Marks	Comments

III. Analysis (6 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.
1–2	Only descriptive or inferential statistics are applied.
	A correct graphing technique is chosen but the graph does not address the hypothesis.
	There is no clear statement of findings.
3–4	Appropriate descriptive and inferential statistics are applied but there are errors.
	The graph addresses the hypothesis but contains errors.
	The statistical findings are stated but either not interpreted with regard to the data or not linked to the hypothesis
5–6	Descriptive and inferential statistics are appropriately and accurately applied.
	The graph is correctly presented and addresses the hypothesis.
	The statistical findings are interpreted with regard to the data and linked to the hypothesis
Marks	Comments

IV. Evaluation (6 marks)

Marks	Level descriptor
0	Does not reach the standard described by the descriptors below.

1–2	The findings of the investigation are described without reference to the background theory or model. Strengths and limitations of the design, sample or procedure are stated but are not directly relevant to the hypothesis. One or more modifications are stated.
3–4	The findings of the student's investigation are described with reference to the background theory or model. Strengths and limitations of the design, sample or procedure are stated and described and relevant to the investigation. Modifications are described but not explicitly linked to the limitations of the student's investigation.
5–6	The findings of the student's investigation are discussed with reference to the background theory or model. Strengths and limitations of the design, sample and procedure are stated and explained and relevant to the investigation. Modifications are explicitly linked to the limitations of the student's investigation and fully justified.
Marks	Comments

The experiment for the internal assessment must adhere to the ethical guidelines outlined below.

- Any experimental study that creates anxiety, stress, pain or discomfort for participants is not permitted. Experiments involving deception, conformity, obedience, or any other form of harm are not permitted. The experiment must be appropriate to the sensitivities of the particular school, community and country.

- Any experimental study that involves unjustified deception, involuntary participation or invasion of privacy, including the inappropriate use of information and communication technology (ICT), email and the internet, must be avoided. There may be rare occasions when such infringements cannot be avoided, in which case the approval of other experienced psychologists should be sought before proceeding.

  - Partial deception may be allowed for some experiments where full knowledge of the experiment would fundamentally affect the outcome—such experiments are permissible provided they do no harm and participants are fully debriefed at the end. Participants retain their right to withdraw their data at this point. The only exception is a conformity or obedience study; these are not permitted under any circumstances. The teacher should be ready and willing to explain why conformity and obedience experiments are not appropriate for students at this level of study.

- Consent must be explicitly gained from participants through the use of a consent form. Implied consent is not acceptable.

- All participants must be informed of the aims and objectives of the experiment.

- All participants must be informed before commencing the experimental study that they have the right to withdraw at any time. Pressure must not be placed on any individual participant to continue with the investigation.

- Young children (under 12 years) must not be used as participants as they cannot give informed consent. Experimental studies involving older children (from 12 years up to 16 years) need the written consent of parent(s) or guardian(s). Students must ensure that parents are fully informed about the implications for children who take part in such research. Where an experimental study is conducted with children in a school, the written consent of the teachers concerned must also be obtained.

- Participants must be debriefed and given the right to withdraw their own personal data and responses. Anonymity for each participant must be guaranteed even after the experiment has finished.

- Participants must be shown the results of the research and if reasonable deception was involved, the participants must have the deception explained and justified to them.

- Teachers and students must exercise the greatest sensitivity to local and international cultures.

- Students must not conduct research with any participant who is not in a fit state of mind and cannot respond freely and independently.

- If any participant shows stress or pain at any stage of an experimental study, the investigation must finish immediately, and the participant must be allowed to withdraw.

- Non-human animals must not be used for the experimental study.

- All data collected must be kept in a confidential and responsible manner and not disclosed to any other person.

- Data must not be used for purposes other than that agreed to by the participants.

- Students must regard it as their duty to monitor the ways in which their peers conduct research, and to encourage public re-evaluation of any research practices that breach these guidelines.

- Experimental studies that are conducted online are subject to the same guidelines. Any data collected online must be deleted once the research is complete. Such data must not be used for any purpose other than the conduct of the experimental study.

- Teachers who feel the need for more guidance on whether an experiment is ethical should consult other teachers via the OCC who may offer additional expertise and critical distance.

For the experiment to be considered ethical, it must do no harm to anyone (also see section "Approaches to the Independent Variable" above). This includes participants, researchers, bystanders, teachers/supervisors, moderators, and eventual readers. Teachers should be prepared to discuss and explain what "harm" means. It can mean a number of things: hurt, injure, torment, tease, torture, traumatize, impair, wound, mistreat, punish, maltreat, misuse, abuse, molest, damage, or adversely affect. Harm manifests in many ways, not only in a physical sense. High standards of ethical practice are central to the IB philosophy and should therefore be promoted and supported by the entire IB community.

Command terms for psychology

Students should be familiar with the following key terms and phrases used in examination questions, which are to be understood as described below. Although these terms will be used frequently in examination questions, other terms may be used to direct students to present an argument in a specific way.

The command terms used in psychology are arranged into four groups labelled assessment objectives (AO). The first three, AO1, AO2 and AO3, are hierarchical with more challenging verbs for assessment as you progress from AO1 to AO3. AO4 is not hierarchical, but represents actions related to subject-specific tasks.

Assessment objective 1 (AO1)	
Knowledge and comprehension of specified content	
These terms require students to demonstrate knowledge and understanding and learn and comprehend the meaning of information.	
Describe	Give a detailed account.
Identify	Provide an answer from a number of possibilities.
Outline	Give a brief account or summary.
Assessment objective 2 (AO2)	
Application and analysis of knowledge and understanding	
These terms require students to use and analyse knowledge and understanding, explain actual situations, break down ideas into simpler parts and to see how the parts relate.	
Comment	Give a judgment based on a given statement or result of a calculation.
Explain	Give a detailed account including reasons or causes.
Suggest	Propose a solution, hypothesis or other possible answer.
Assessment objective 3 (AO3)	
Synthesis and evaluation	
These terms require students to make a judgment based on evidence and, when relevant, construct an argument or rearrange component ideas into a new whole and make judgments based on evidence or a set of criteria.	
Contrast	Give an account of the differences between two (or more) items or situations, referring to both (all) of them throughout.
Discuss	Offer a considered and balanced review that includes a range of arguments, factors or hypotheses. Opinions or conclusions should be presented clearly and supported by appropriate evidence.
Evaluate	Make an appraisal by weighing up the strengths and limitations.
To what extent	Consider the merits or otherwise of an argument or concept. Opinions and conclusions should be presented clearly and supported with appropriate evidence and sound argument.

Assessment objective 4 (AO4)	
Selection and use of skills appropriate to psychology. The terms require students to take action.	
Design	Produce a plan, simulation or model.
Investigate	Observe, study, or make a detailed and systematic examination, in order to establish facts and reach new conclusions.
Predict	Give an expected result.