

1. Proficiency scale - the nervous system and how we investigate it

Edexcel specification references: 3.1.1 (The CNS)
 3.1.3 (The structure of the brain)
 3.2.3 (Brain scanning techniques)

4.0	<p>The student will: (predict, evaluate/extended abstract)</p> <p>The student will evaluate CAT, PET and fMRI scans by comparing their relative strengths and weaknesses in relation to particular research situations, justifying their judgements using factual information about the scanning techniques (e.g. by writing an essay explaining how two scanning techniques could be used to investigate a specific question and arguing for the suitability of one scanning technique over another).</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse/relational)</p> <p>3.1 Compare the functions of different divisions/structures/areas in the nervous system; analyse the involvement of different divisions/structures/areas in different situations (e.g. by explaining what happens when a person touches a hot surface).</p> <p>3.2 Explain how CAT, PET and fMRI scans could be used in psychological research (NB. not medicine) and compare the characteristics of the different scans (e.g. by choosing and justifying a particular scan for a specific situation).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe/uni- and multistructural)</p> <p>2.1 Recognise or recall specific vocabulary: <i>nervous system; somatic nervous system; autonomic nervous system; central nervous system; spinal cord; hindbrain; midbrain; forebrain; cerebral hemispheres; lateralisation; localisation; frontal, parietal, occipital, temporal lobes; prefrontal cortex, motor strip, sensory strip, Broca's area; Wernicke's area; visual cortex</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Describe the main divisions of the nervous system and compare their functions. ● Describe the major structures of the central nervous system and compare their functions. ● Label the lobes of the brain and six cortical areas. ● Describe the functions of six cortical areas. <p>2.2 Recognise or recall specific vocabulary: <i>Computerised Axial Tomography (CAT/CT), Positron Emission Tomography (PET), functional magnetic resonance imaging (fMRI), structural imaging, functional imaging, spatial resolution, temporal resolution</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Describe the general procedure for conducting a brain scan. ● Describe how CAT, PET and fMRI produce images of the brain.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

2. Proficiency scale - neuronal and synaptic transmission

Edexcel specification references: 3.1.1 (The CNS)
3.1.3 (The structure of the brain)

4.0	<p>The student will: (predict, evaluate)</p> <p>The student will predict the effect of multiple synaptic inputs on a single neuron's firing rate, given information about whether the inputs are excitatory or inhibitory and their firing rates.</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Compare the functions of motor, sensory and interneurons and analyse their involvement in different situations (e.g. by explaining what happens when a person hears a loud, unexpected noise).</p> <p>3.2 Explain how synaptic activity influences cognition, emotion and behaviour (e.g. by researching and presenting the link between a specific behavioural function or psychological disorder and a specific neurotransmitter system).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>2.1 Recognise or recall specific vocabulary: <i>neuron, neuronal transmission, firing rate, dendrite, soma, axon, terminal, neural membrane, myelin sheath, node of ranvier, action potential</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Describe the structure of a neuron. ● Draw and label a neuron. ● Describe the process of neuronal transmission. <p>2.2 Recognise or recall specific vocabulary: <i>synapse, inhibitory and excitatory synapse, presynaptic membrane, vesicle, neurotransmitter, postsynaptic membrane, receptor, reuptake mechanism</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Describe the structure of a synapse. ● Draw and label a synapse. ● Describe the process of synaptic transmission.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

3. Proficiency scale - drugs and synaptic transmission (including Key Question)

Edexcel specification references: 3.1.2 (The effect of recreational drugs)
 3.4.1 (One key question of relevance to today's society)
 3.4.2 (Concepts/theories and/or research from Topic 3)

4.0	<p>The student will: (predict, evaluate)</p> <p>The student will evaluate the use of drug therapy for dependency by comparing its relative strengths and weaknesses with those of non-drug-based interventions, using explicit criteria and justifying their judgements with factual information about the drugs/therapies and evidence from research (e.g. by writing an essay discussing the debate about the best form of intervention for drug dependency).</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Compare how different recreational drugs affect the process of synaptic transmission. Explain how different recreational drugs affect cognition, emotion and behaviour with reference to how they affect synaptic transmission and the mechanisms by which they may produce tolerance and dependency.</p> <p>3.2 Explain the effect of therapeutic drugs (e.g. methadone) in terms of their effect on synaptic activity. Analyse the risks of recreational drug use for the individual and for society (e.g. by explaining the justification for therapeutic intervention for drug dependency).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>Recognise or recall specific vocabulary: <i>recreational drug</i>, <i>reward pathway</i>, <i>dopamine</i>, <i>tolerance</i>, <i>dependency</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> Describe the effects of recreational drugs (e.g. heroin, cocaine, cannabis) on cognition, emotion and behaviour, including their propensity for tolerance and dependency. Describe the use of methadone (or similar) as a treatment for drug dependency.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

4. Proficiency scale - correlational studies

Edexcel specification references: 3.2.1 (Correlational research)
3.2.2 (Analysis of correlational data)

4.0	<p>The student will: (predict, evaluate)</p> <p>Evaluate correlational study as a research design by comparing its relative strengths and weaknesses with experimental and other research designs, making reference to its suitability for different research situations, justifying their judgements with factual information (e.g. by presenting an argument for the suitability of using a correlational design to investigate an unfamiliar scenario).</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Calculate Spearman's rank order correlation from data and check the calculated value for significance.</p> <p>3.2 Draw appropriate conclusions from correlational data (scatterplots, correlation coefficients and significance tests), showing consideration of the aims of the research (e.g. by writing the 'results' section of a practical investigation using a correlational design).</p> <p>3.3 Compare correlational and experimental studies in terms to the types of data that might be used and the conclusions that could be drawn from them.</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>Recognise or recall specific vocabulary: <i>correlation, variable, covariable, scatterplot, correlation coefficient, significant, alternative/null hypothesis, directional/non-directional hypothesis</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Identify the covariables in example studies. ● Plot a scatterplot from data including accurate plotting, suitable scale and title/labels. ● Describe trends from a scatterplot and from a correlation coefficient (positive, negative, no correlation; strong, weak). ● State alternative and null hypotheses for a correlational study.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

5. Proficiency scale - aggression, evolution and genes

Edexcel specification references: 3.1.4 (The role of evolution and natural selection)
 3.1.8 (Developmental psychology)
 3.2.3 (One twin and one adoption study)
 3.3.3 (One contemporary study)

4.0	<p>The student will: (predict, evaluate)</p> <p>4.1 Evaluate evolutionary theory as an explanation of aggression by comparing its relative strengths and weaknesses, justifying their judgements with facts about the theories and relevant research findings and giving due consideration to the quality of evidence that supports/challenges different explanations (e.g. by writing an essay critically comparing evolutionary and psychodynamic or social learning explanations)</p> <p>4.2 Evaluate the study by Brendgen et al (2005) its relation to (1) its methodology (objectivity, reliability, internal validity, generalisability); (2) practical applications; and (3) ethics.</p> <p>4.3 Use evolutionary ideas to explain unfamiliar scenarios that are not related to aggression, including some evaluation or how valid/useful such an explanation is likely to be.</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Explain why levels of aggression vary between species and develop differently between individuals in a population, using evolutionary and genetic ideas. Explain different influences on the evolution of aggression (e.g. competition for resources, mate guarding).</p> <p>3.2 Explain conclusions from studies of evolutionary and genetic influences. Criticise these studies using criteria of (e.g.) objectivity, reliability, internal validity and generalisability.</p> <p>3.3 Compare evolutionary/genetic explanations of aggression with alternative explanations (e.g. psychodynamic or social learning theory).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>Recognise or recall specific vocabulary: aggression, evolution, natural selection, gene, twin study, adoption study and perform basic operations such as:</p> <ul style="list-style-type: none"> • Describe how evolution by natural selection could explain the existence of aggressive behaviour within a population, • Describe research findings relating to evolution and aggression • Describe a twin study (Brendgen et al, 2005) and an adoption study of aggression.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

6. Proficiency scale - aggression and the brain

Edexcel specification references: 3.1.3 (The structure of the brain)
 3.1.7 (Individual differences)
 3.2.3 (Brain-scanning techniques)
 3.3.1 (Classic study: Raine et al, 1997)

4.0	<p>The student will: (predict, evaluate)</p> <p>4.1 Evaluate brain structure as an explanation of aggression by comparing its relative strengths and weaknesses, justifying their judgements with facts about the theories and relevant research findings and giving due consideration to the quality of evidence that supports/challenges different explanations (e.g. by writing an essay critically comparing brain-based and psychodynamic or social learning explanations)</p> <p>4.2 Evaluate the study by Raine et al (1997) its relation to (1) its methodology (objectivity, reliability, internal validity, generalisability); (2) practical applications; and (3) ethics.</p> <p>4.3 Use ideas about brain structure to explain unfamiliar scenarios that are not related to aggression, including some evaluation or how valid/useful such an explanation is likely to be.</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Explain the role of different brain structures in aggression e.g. the different contributions of the amygdala and the prefrontal cortex.</p> <p>3.2 Explain conclusions from studies of brain structure. Criticise these studies using criteria of (e.g.) objectivity, reliability, internal validity and generalisability, linking this to the use of brain scanning (PET, CAT, fMRI) where appropriate.</p> <p>3.3 Compare brain-based explanations of aggression with alternative explanations (e.g. psychodynamic or social learning theory).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>Recognise or recall specific vocabulary: <i>amygdala, prefrontal cortex, corpus callosum, serotonin</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Describe the brain structures involved with aggressive behaviour. ● Describe some reasons for individual differences in brain structure (e.g. genes, TBI) ● Describe research studies of brain structure and aggression including Raine et al (1997)
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

7. Proficiency scale - aggression and hormones

Edexcel specification references: 3.1.6 (The role of hormones)
3.1.7 (Developmental psychology)

4.0	<p>The student will: (predict, evaluate)</p> <p>4.1 Evaluate hormonal influence as an explanation of aggression by comparing its relative strengths and weaknesses, justifying their judgements with facts about the theories and relevant research findings and giving due consideration to the quality of evidence that supports/challenges different explanations (e.g. by writing an essay critically comparing hormonal influences and psychodynamic or social learning explanations)</p> <p>4.2 Use ideas about hormonal influences to explain unfamiliar scenarios that are not related to aggression, including some evaluation or how valid/useful such an explanation is likely to be.</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Explain how hormones affect the development and functioning of the nervous system in ways that are relevant to aggression.</p> <p>3.2 Explain conclusions from studies of hormones. Criticise these studies using criteria of (e.g.) objectivity, reliability, internal validity and generalisability, linking this to the use of correlational versus experimental designs where appropriate.</p> <p>3.3 Compare hormone-based explanations of aggression with alternative explanations (e.g. psychodynamic or social learning theory).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>Recognise or recall specific vocabulary: <i>hormone, testosterone, organising/activating effect</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> • Describe the effects of testosterone. • Describe research studies of hormones and aggression including at least one experimental study and one correlational study.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.

8. Proficiency scale - the psychodynamic theory of aggression

Edexcel specification references: 3.1.5 (Freud's psychodynamic explanation)
3.1.7 (Individual differences)

4.0	<p>The student will: (predict, evaluate)</p> <p>4.1 Evaluate psychodynamic theory as an explanation of aggression by comparing its relative strengths and weaknesses, justifying their judgements with facts about the theories and relevant research findings and giving due consideration to the quality of evidence that supports/challenges different explanations (e.g. by writing an essay critically comparing psychodynamic with biological or social learning explanations)</p> <p>4.2 Use ideas about hormonal influences to explain unfamiliar scenarios that are not related to aggression, including some evaluation or how valid/useful such an explanation is likely to be.</p>
3.5	In addition to score 3.0 performance, the student has partial success at score 4.0 content.
3.0	<p>The student will: (sequence, classify, compare, explain, analyse)</p> <p>3.1 Explain, using psychodynamic theory, why people vary in their levels of overt aggression.</p> <p>3.2 Explain conclusions from studies of psychodynamic ideas. Criticise these studies using criteria of (e.g.) objectivity, reliability, internal validity and generalisability.</p> <p>3.3 Compare psychodynamic explanations of aggression with alternative explanations (e.g. biological or social learning theory).</p>
2.5	The student has no major errors or omissions regarding score 2.0 content, and partial success at score 3.0 content.
2.0	<p>The student will: (recognise, define, describe)</p> <p>Recognise or recall specific vocabulary: <i>id, ego, superego, drive, frustration/aggression, catharsis, defence mechanism, displacement, sublimation, vicarious aggression</i> and perform basic operations such as:</p> <ul style="list-style-type: none"> ● Describe the structure of the psyche and the roles of id, ego and superego. ● Describe the basic mechanisms leading to aggressive behaviour. ● Describe research studies that investigated psychodynamic ideas about aggression.
1.5	The student has partial success at score 2.0 content and major errors or omissions regarding score 3.0 content.
1.0	With help, the student has partial success at score 2.0 content and score 3.0 content.
0.5	With help, the student has partial success at score 2.0 content but not at score 3.0 content.
0	Even with help, the student has no success.