GCSE Psychology
Paper 1
Cognition and behaviour
Revision guide

NAME: _____

EXAM DATES

FRIDAY 24TH MAY 2019

MONDAY 3RD JUNE 2019

Paper 1: Cognition and behaviour

What's assessed

- Memory
- Perception
- Development
- Research methods

Students will be expected to draw on knowledge and understanding of the entire course of study to show a deeper understanding of these topics.

How it's assessed

- Written exam: 1 hour 45 minutes
- 100 marks
- 50% of GCSE

Questions

- Section A: multiple choice, short answer and extended writing (25 marks)
- Section B: multiple choice, short answer and extended writing (25 marks)
- Section C: multiple choice, short answer and extended writing (25 marks)
- Section D: multiple choice, short answer and extended writing (25 marks)

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Paper 2: Social context and behaviour

What's assessed

- Social influence
- Language, thought and communication
- Brain and neuropsychology
- Psychological problems

Students will be expected to draw on knowledge and understanding of the entire course of study to show a deeper understanding of these topics.

How it's assessed

- Written exam: 1 hour 45 minutes
- 100 marks
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Questions

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- Section B: multiple choice, short answer and extended writing (25 marks)
- Section C: multiple choice, short answer and extended writing (25 marks)
- Section D: multiple choice, short answer and extended writing (25 marks)

- MEMORY
- RESEACH METHODS
- PERCEPTION
- DEVELOPMENT

YEAR 10

- SOCIAL INFLUENCE
- LANGUAGE, THOUGHT + COMMUNICATION
- BRAIN AND NEUROPSYCHOLOGY
- PSYCHOLOGICAL PROBLEMS

YEAR 11

GOLDEN RULE

ANSWER **EVERY** QUESTION ON THE PAPER!

YOU CAN ONLY GAIN MARKS IF YOU WRITE SOMETHING!

EXAM AND REVISION TIPS

1. When defining a key term, do NOT use the word you are defining within your answer!

✗ "Obedience is when people obey authority figures"

✓ "Obedience is when people follow orders from authority figures"

2. If you are asked to draw a graph, make sure you include a title, labelled X and Y axis and an appropriate scale – i.e. if the data starts at 400, **don't** start your axis at 0!

3. Never start a hypothesis with 'I'! Always start it with "There will be…"

4. Use acronyms to summarise main points of theories – i.e. **SPCF** (sensorimotor, pre-operational, concrete operational and formal operational – stages of development)

5. Make your revision material as **concise** as possible – summarise key studies & theories onto flashcards. You could have description on the front and evaluation on the back!

6. No matter how tempting it is, avoid listening to music whilst revising. Studies have shown that we have trouble recalling if our physical state is different from when we learnt the material (Carter & Cassaday!).
If you use music because other things distract you, find a quiet room without the distractions instead.

USEFUL WEBSITES

- https://illuminate.digital/aqapsychgcse/ (Use the digital access to the textbook to summarise key concepts, catch up on missed work and practice exam questions!).
- https://learndojo.org/aqa/gcse-psychology-revision/ (A website that covers **most** of what you need to know for your exam).
- www.getrevising.co.uk (Make flashcards, revision documents, steal revision material that is already made! Just make sure you select the correct exam board **[AQA]** using the filters when searching).
- https://simplypsychology.org/ (An older website but still relevant! Just a warning – you don't need to know everything on that website).
- https://www.tutor2u.net/psychology/collections (An **A-LEVEL** website ran by exam performance specialists – hundreds of free study notes with the choice to buy extra revision material).

GOLDEN RULE
ANSWER **EVERY** QUESTION ON THE PAPER!
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EXAM TIPS

Use a template like the one below to help structure your 9 mark answers

AIM: What did the researcher want to find out?

METHOD: How was the study carried out?

RESULTS: What did the researcher find?

CONCLUSION: What can the researchers now say about **people** in general?

EVALUATION PEE #1:

EVALUATION PEE #2:

EXAM TIPS

If you struggle to remember evaluation, use the prompts below to help!

HOW CAN WE EVALUATE STUDIES?

G R A V E D

GENERALISABILITY

- Does the sample used in the study represent everyone? If the study used males only, does it represent females?
- Does the study use animals? If so, can we say that a human would act in the same way?

RELIABILITY

- Can the study be easily replicated? If not, we cannot say it is a reliable method
- If the research is a case study, it would have low reliability as we cannot easily replicate case studies. If the research is a lab experiment, it can be easily replicated.

APPLICATION

- Can the findings from the research be used to benefit society in any way? Can the findings from the research be used to explain why/how something happens in every day life?
- "Research into memory has shown us that if we rehearse information, we have a better chance of remembering it. This is useful because we can use this to select information we want to remember"

VALIDITY

- A study may lack external validity if the people used in the study have a specific characteristic, i.e. epilepsy
- Does the study lack ecological validity? If the setting of the study does not replicate an everyday setting, it lacks ecological validity

ETHICAL ISSUES

- Does the experiment break any ethical guidelines? Which ones does it break?
- If the study doesn't break any ethical issues, it is a strength but DO NOT include this as evaluation, it is not strong enough!

DESIGN

- What experimental design is used in this study? How might this impact the results?
- Would a different experimental design suit the study better? Explain why

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HOW CAN WE EVALUATE THEORIES?

S C O U T

SUPPORTING EVIDENCE

- Are there any studies or other evidence which might suggest this theory is correct?

CONFLICTING EVIDENCE

- Are there any studies or other evidence which might suggest this theory is incorrect?

OTHER THEORIES

- How else might we explain this behaviour? Are there important things that this theory fails to explain?

USEFULNESS

- Does this theory have any practical applications? Does it have any use in a real life situation?

TESTABLE

- Can this theory be tested? If it is difficult to test, how can the theory be 'proved'?

Remember: your evaluation doesn't have to be a mixture of strengths and weaknesses! It can be all strengths or all weaknesses.

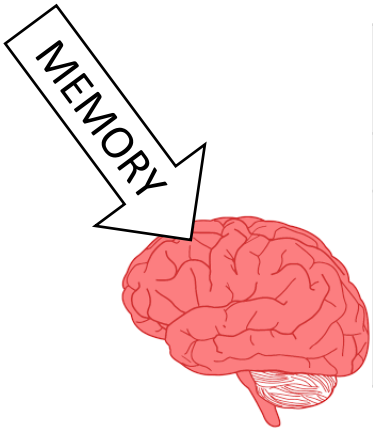
TOPIC 1 - MEMORY

What do I need to know for the memory topic?

Content	Additional information
Processes of memory: encoding (input) storage and retrieval (output)	Different types of memory: episodic memory, semantic memory and procedural memory. How memories are encoded and stored.
Structures of memory	The multi-store model of memory: sensory, short term and long term. Features of each store: coding, capacity, duration. Primacy and recency effects in recall: the effects of serial position. Murdock's serial position curve study.
Memory as an active process	The Theory of Reconstructive Memory, including the concept of 'effort after meaning'. Bartlett's War of the Ghosts study. Factors affecting the accuracy of memory, including interference, context and false memories.

#	Content			
1	Introduction to encoding, storage and retrieval			
2	A study of encoding: Baddeley (AO1)			
3	A study of encoding: Baddeley (AO3)			
4	Multi-store model (AO1)			
5	Multi-store model (AO3)			
6	Types of long-term memory (AO1 + AO3)			
7	Serial position curve study: Murdock (AO1)			
8	Serial position curve study: Murdock (AO3)			
9	Reconstructive memory study: Bartlett (AO1)			
10	Reconstructive memory study: Bartlett (AO3)			
11	Reconstructive memory theory (AO1 + AO3)			
12	Forgetting: Interference (McGeoch and McDonald AO1 + AO3)			
13	Forgetting: Context (Godden and Baddeley AO1 + AO3)			
14	Forgetting: False memories (Loftus and Palmer AO1 + AO3)			

LESSON #1 – INTRO TO ENCODING, STORAGE AND RETRIEVAL



ENCODING
- Changing information so it can be held in our brains

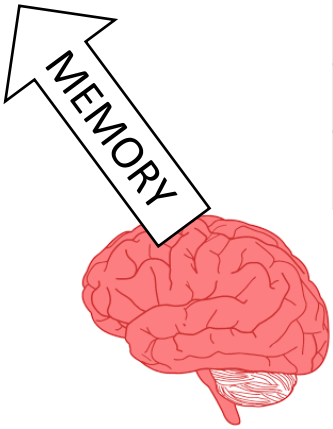
THERE ARE **3** TYPES OF ENCODING:

VISUAL – Storing info based on the way it looks (i.e. the colour of your dog)	**ACOUSTIC** – Storing info based on the way it sounds (i.e. what noise your dog makes)	SEMANTIC – Storing info based on its meaning (i.e. knowing what the word dog means)

STORAGE
- Keeping the information in your brain for a period of time

THERE ARE **2** TYPES OF STORAGE:

SHORT-TERM – holding a limited amount info for approximately 18-30 seconds	**LONG TERM** – holding info for up to a lifetime



RETRIEVAL
- Locating stored information and using it

THERE ARE **3** TYPES OF RETRIEVAL:

RECOG-NITION - Retrieving info whilst having options to choose from (i.e. multiple choice questions)	**CUED RECALL** - Retrieving information whilst being given a cue (i.e. it begins with the letter A)	**FREE RECALL** - Retrieving information without cues/ options (i.e. what is the capital of France? Paris!)

EXAM PRACTICE #1

1) Which one of the following is a description of storage? **[1 mark]**
   a) Putting information into your memory
   b) Recalling information
   c) Learning information in terms of how it sounds
   d) Holding information in your memory

2) Use your knowledge of psychology to explain how your memories are encoded. Give an example in your answer. **[2 marks]**

3) Explain what is meant by each of the following terms: 'encoding' and 'retrieval' **[4 marks]**

LESSON #2 – A STUDY OF ENCODING BY BADDELEY (1966) - DESCRIPTION

LESSON #3 – A STUDY OF ENCODING BY BADDELEY (1966) - EVALUATION

BADDELEY (1966) - ENCODING		
	AO1 DESCRIPTION	**AO3 EVALUATION**
A	To see how information is coded in STM and LTM.	We cannot say for sure that other people would have acted in the same way during this study. Baddeley used students and therefore we cannot generalise the findings to the rest of the population – especially people who aren't students. this is a disadvantage because we are not able to apply the findings to real life.
M	He gave different lists of words to groups of participants to remember: • Group 1 (Acoustically similar): words sounded similar (cat, cab, can) • Group 2 (Acoustically dissimilar): words sounded different (pit, few, cow) • Group 3 (Semantically similar): words with similar meaning (great, large, big) • Group 4 (Semantically dissimilar): words with different meanings (good, huge, hot) Participants were shown the original words and asked to recall them in the correct order.	Participants only took part in one condition of the experiment rather than several. This is an advantage because taking part in several conditions can mean the participant becomes bored or tired, leading to inaccurate results. The participant also might guess what the study is aiming to do and show demand characteristics – acting in a way to please the researcher.
R	When they had to recall immediately (STM recall), they tended to perform worse with acoustically similar words. When they had to recall after 20 minutes (LTM recall), they tended to perform worse with semantically similar words.	The experiment took place in a lab setting which was unnatural for participants. Being in a different environment might have made them feel nervous or under pressure and could have lead to inaccurate results. We can say this study lacks ecological validity and it is therefore a disadvantage as the results might be inaccurate.
C	This suggests that information is coded acoustically in STM and semantically in LTM.	

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

EXAM PRACTICE #2

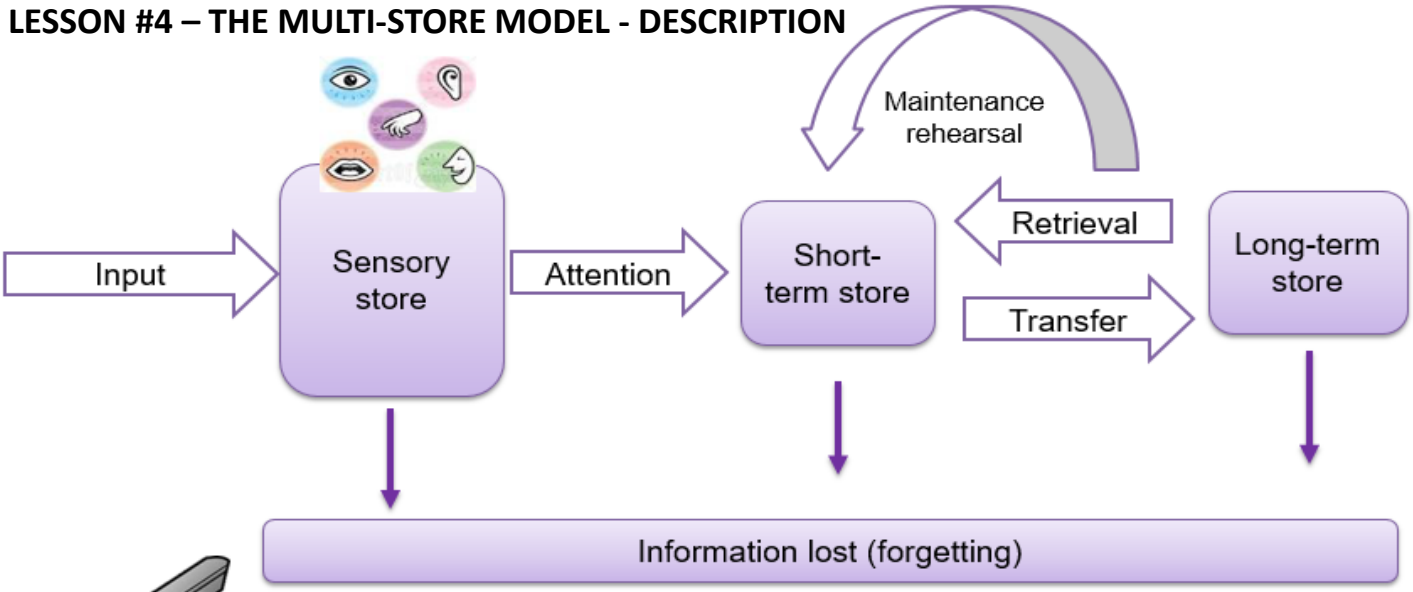
1) Research into encoding could be said to lack validity. State what is meant by a 'lack of validity'. Briefly explain why validity might or might not be an issue in a study that investigated encoding **[3 marks]**

2) Imagine that you have been to asked to conduct a study to investigate encoding. Write a hypothesis for this study. **[2 marks]**

3) Describe and evaluate **one** study that has investigated how memories are encoded. [4 **marks]**




LESSON #4 – THE MULTI-STORE MODEL - DESCRIPTION



Multi-store model (MSM):
A representation of how memory works. It describes how information can move from one store to another. It is a linear sequence so information can flow backwards and forwards.

S&C KEY FACTS:
The MSM states there are three different memory stores that are completely independent of each other.

Sensory store

Information that arrives at our senses is briefly held in the sensory store. Information only stays here for less than one second and will quickly fade away if we don't pay attention to it. The capacity of this store is very limited. Coding in the sensory store occurs in the same way as the information is received, for example visual information will be coded visually. Therefore, coding depends on the stimulus.

Short-term store (STS)

The short-term store (STS) has a small capacity, it can hold approximately 7 pieces of information. New information pushes old information out. If the information in the STS is not rehearsed (or repeated), it is likely to be forgotten very quickly, within 30 seconds. Information is coded acoustically (based on its sound) in STS. For us to be able to keep information in our STS, we must rehearse it.

Long-term memory (LTM)

This is the final store. Information enters this store through transfer from the STS. Experiments have shown that this store has an unlimited capacity and duration. This means that we can potentially remember information for a whole lifetime Information is coded semantically (based on its meaning) in LTS.

THE MULTI-STORE MODEL – KEY INFO

	Sensory store	STM	LTM
Coding	Depends on stimulus	Acoustically	Semantically
Capacity	Very limited	5-9 items	Unlimited
Duration	Less than 0.5 sec	18-30 seconds	Unlimited

LESSON #5 – THE MULTI-STORE MODEL - EVALUATION

MULTI-STORE MODEL	
STRENGTHS	**WEAKNESSES**
A case study supports the theory of the MSM. HM suffered from severe epilepsy and so he underwent brain surgery to relieve his symptoms. The procedure went wrong and when he woke up, he was unable to form new memories. He was unable to store memories into long-term memory nor access any of his long-term memories. This supports the MSM because it shows us that the two memory stores must be different and unitary, otherwise they would have both been damaged.	CA case study weakens the theory of the MSM. KF had a motorbike accident and his short-term memory was damaged. According to the MSM, KF shouldn't be able to access any of his short-term memory if it was damaged. However, KF was able to access visual information from his short-term memory. This weakens the theory as it shows that the short-term memory store can't be a single unit otherwise it would have all been damaged in his accident. The MSM fails to explain why KF can remember visual information.
The MSM has been useful in helping students to revise for exams. The MSM states that we can get information to enter our long-term memory by rehearsing it. This has useful applications as students can now repeat information over and over in order for it to enter their long-term memory. This is a strength as it shows how the MSM has been useful in real life situations.	A weakness of the MSM is that is fails to explain how we can manipulate information in our short-term memory. Other researchers said the MSM was too simple and therefore came up with their own idea. The WMM states that information in our short—term memory is directed to other systems in order to be manipulated. This is a weakness of the MSM as it fails to explain what another theory can explain.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 4!

EXAM PRACTICE #3

1) Identify **three** features of short-term memory (STM). Refer to encoding, capacity and duration in your answer **[3 marks].**

2) Explain how the multi-store model has increased our understanding of memory. **[2 marks]**

3) Describe and evaluate the multi-store model of memory. [4 **marks]**

LESSON #6 – TYPES OF LONG-TERM MEMORY

EPISODIC

Our ability to recall events (or episodes) that have happened in our lives, almost like a diary.

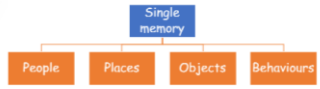
AO1 DESCRIBE

It is linked to the hippocampus region of the brain.

Examples include visiting the dentist, the psychology lesson you had last week or the breakfast you ate this morning.

We must make a conscious effort to recall these memories. This might happen quickly but you are still aware that you are trying to remember what happened in each memory.

Our memory of a single episode will include several elements such as people, places, objects and behaviours. All of these are linked together to produce a single memory.

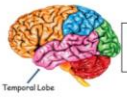


These memories are 'time-stamped', i.e. we can remember when they happened.

SEMANTIC

Our knowledge of the world such as facts, almost like an encyclopedia or dictionary.

AO1 DESCRIBE



It is linked to the temporal lobe.

Examples include knowledge of things like what an orange tastes like, what zombies like to eat for dinner and the meaning of words.

The meaning of words is specifically important, your semantic memory contains your knowledge of an impressive number of concepts such as 'animals', 'Justin Bieber' or 'love'.

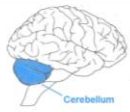
Semantic knowledge is less personal and is more about facts we all share. However, it is more than just facts, it contains an immense collection of material which is constantly being added to.

These memories are not 'time-stamped', we don't usually remember when we first learnt about Justin Bieber, for example.

PROCEDURAL

Our memory for actions or skills, basically how we do things. We can recall these memories without conscious awareness or a great deal of effort.

AO1 DESCRIBE



It is linked to the cerebellum.

Examples include driving a car or riding a bike.

If you try to describe what you are doing as you are performing the action (i.e. driving a car), you will find it more difficult!

Our ability to do things eventually depends on procedural memory. We can even change gear without having to recall how and we indicate left or right at a junction without even realising we have.

Procedural memory skills can be hard to explain to someone else.

EXAM PRACTICE #4

1) Outline **two** strengths of the theory of types of long-term memory **[4 marks]**

2) Explain what is meant by the terms 'episodic memory', 'semantic memory' and 'procedural memory' **[6 marks]**

TYPES OF LONG-TERM MEMORY

STRENGTHS

People who suffer from loss of memory due to brain damage lose only certain kinds of memory. An example of this is Clive Wearing. He developed an infection in his brain that meant he lost other types of memory whilst his procedural memory remained intact . This is a strength because it shows the types of long-term memories are separate. If they weren't, all of Clive's memory would have been destroyed but that isn't the case. This is an example of supporting research.

Brain scans have shown separate locations in the brain for each of the three types of memory. Researchers have found that episodic memory is associated with the right prefrontal area, semantic memory is associated with the left prefrontal area and procedural memory is associated with the motor area. This is a strength because it shows that the types of long-term memories are separate. If the memories were all in the same area of the brain, it would be difficult to say there are different types. This is an example of supporting research.

WEAKNESSES

There isn't a clear difference between episodic and semantic memories. Most of our memories could actually be classed as a combination of episodic and semantic ones. For example, your knowledge (semantic memory) of your favourite band is closely linked to your experiences of seeing them perform (episodic memory). This is a weakness because it suggests that the type of long-term memories have been over simplified. It doesn't provide a clear distinction between the different types, especially semantic and episodic memories.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

LESSON #7 – A STUDY OF THE SERIAL POSITION EFFECT BY MURDOCK (1962)- DESCRIPTION
LESSON #8 – A STUDY OF THE SERIAL POSITION EFFECT BY MURDOCK (1962)- EVALUATION

KEY STUDY - IMPORTANT

MURDOCK (1962) – SERIAL POSITION EFFECT

	AO1 DESCRIPTION	AO3 EVALUATION
A	To see if the position of the word in a list affected the probability of recalling it	We cannot say for sure that other people would have acted in the same way during this study. Murdock used students and therefore we cannot generalise the findings to the rest of the population – especially people who aren't students. this is a disadvantage because we are not able to apply the findings to real life.
M	Murdock used 103 students/people in his study. They were tested in a lot of sessions. In each session, the participants listened to 20 word lists, each containing 10-40 words. All of the words were different. Participants were then asked to recall the words to the experimenter.	The experiment took place in a lab setting which was unnatural for participants. Being in a different environment might have made them feel nervous or under pressure and could have lead to inaccurate results. We can say this study lacks ecological validity and it is therefore a disadvantage as the results might be inaccurate.
R	The likelihood of recall was related to the position of the word in the list. The words at the start were remembered due to the **primacy effect** (remembering the start) and the words at the end were remembered due to the **recency effect** (remembering the end).	Participants took part in several tests during the experiment rather than just one. This is a disadvantage because taking part in several conditions can mean the participant becomes bored or tired, leading to inaccurate results. The participant also might guess what the study is aiming to do and show demand characteristics – acting in a way to please the researcher.
C	People are more likely to remember a word if it is at the start of the end of a list	

Serial position effect
The idea that the first and last few words in a list are more likely to be recalled (in comparison to the middle) due to their position.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

KEY STUDY - IMPORTANT

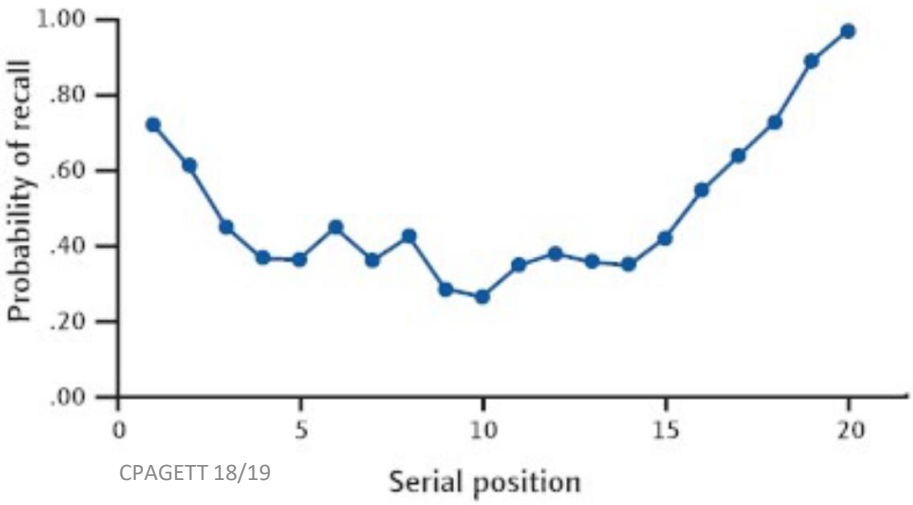
EXAM PRACTICE #5

1) Outline what is meant by the following terms: primacy effect and recency effect **[4 marks]**

2) Outline **two** weaknesses of Murdock's study **[4 marks]**

3) Describe and evaluate Murdock's serial position curve study **[9 marks]**

A GRAPH TO SHOW MURDOCK'S RESULTS



LESSON #9 – A STUDY OF RECONSTRUCTIVE MEMORY BY BARTLETT (1932) - DESCRIPTION
LESSON #10 – A STUDY OF RECONSTRUCTIVE MEMORY BY BARTLETT (1932) - EVALUATION

KEY STUDY - IMPORTANT

BARTLETT (1932) – RECONSTRUCTIVE MEMORY

	AO1 DESCRIPTION	AO3 EVALUATION
A	to investigate how memories are reconstructed when people are asked to recall a story they have been told.	We cannot say for sure that other people would have acted in the same way during this study. Bartlett used students and therefore we cannot generalise the findings to the rest of the population – especially people who aren't students. this is a disadvantage because we are not able to apply the findings to real life.
M	In order to investigate this, Bartlett used 20 people from a university in the UK. He told them a story (The War of the Ghosts) and then asked them to recall it 15 minutes later to another participant. This then repeated itself, almost like a game of Chinese whispers. Participants were then asked to recall the story after a few days, weeks, months and years.	The experiment took place in a lab setting which was unnatural for participants. Being in a different environment might have made them feel nervous or under pressure and could have lead to inaccurate results. We can say this study lacks ecological validity and it is therefore a disadvantage as the results might be inaccurate.
R	Participants remembered fragments of the story and then retold it with small changes, based on what they expect from a social situation. The story became shorter and some phrases were changed based on the participants' cultures. Students were found to have altered the story so it fit into their own experiences and culture. For example instead of canoes, students recalled the mode of transport being cars and weapons as guns instead of bow and arrows.	Participants took part in several tests during the experiment rather than just one. This is a disadvantage because taking part in several conditions can mean the participant becomes bored or tired, leading to inaccurate results. The participant also might guess what the study is aiming to do and show demand characteristics – acting in a way to please the researcher.
C	People remember fragments of memories and reconstruct the memory based on what they expect to happen, based on their social expectations	

Reconstructive memory
The idea that we only store some parts of memories and fill in the gaps with our expectations when it comes to telling it so it makes sense.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

KEY STUDY - IMPORTANT

EXAM PRACTICE #6

1) Outline what is meant by reconstructive memory **[2 marks]**

2) Outline **two** weaknesses of Bartlett's study **[4 marks]**

3) Describe and evaluate Bartlett's reconstructive memory study **[9 marks]**

LESSON #11 – THEORY OF RECONSTRUCTIVE MEMORY

BARTLETT – RECONSTRUCTIVE MEMORY THEORY	
AO1 DESCRIPTION	**AO3 EVALUATION**
The reconstructive memory theory is concerned with what happens when information is stored and retrieved from memory. Some people think memory is like a DVD where we can mentally play back events and recall them exactly the way they happened, however, this is not the case. We tend to try and **reconstruct** memories on the basis of what we think **probably** happened, what **usually** happens, or what **must have** happened. Bartlett said that we store fragments of information and when we need to recall it, we piece these fragments together to make sense. Sometimes elements may be missing which is when we 'fill in the gaps', leading to an inaccurate memory. Individuals use schemas (packets of information to help understand the world based upon previous experience) to try and make sense of new information. For example, if we saw a car crash and the police interviewed us, we may tell them we are sure that we saw a lot of broken glass on the road after the accident (even though there may not have been any!). The reason for such an inaccurate memory may be that we thought that that's what **usually/probably** happens when two cars crash based upon previous experience.	The theory of reconstructive memory has a wide range of supporting evidence. For example, Bartlett's War of the Ghosts study found that people do indeed reconstruct their memories based on what they think should have happened or probably would have happened The theory of reconstructive memory explains how memories can change but it fails to explain how memories are stored and retrieved, among other things. A theory that does explain these processes is the multi-store model of memory. This is a disadvantage for the theory of reconstructive memory as it fails to explain these basic memory processes. Bartlett conducted research that was investigating his own theory. We could say that his study may not be credible as he conducted it himself. He may have adjusted the results to suit his theory and therefore we cannot rely on the study too much.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

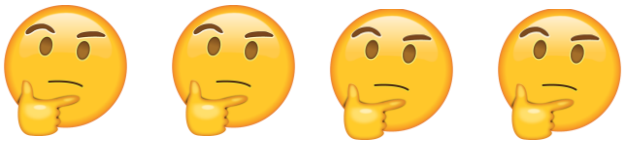
EXAM PRACTICE #7

1) Ann and Martyn were at the bank when a person attempted to rob it. Later, they described the incident differently. Ann said the incident happened in a different order than Martyn recalled. She remembered the robber wearing different clothes to what Martyn recalled.
Use your knowledge of the theory of reconstructive memory to explain why Ann and Martyn have different memories of the same event**. [6 marks]**

2) Outline **two** criticisms of the theory of reconstructive memory **[4 marks]**

LESSON #12 – A STUDY OF INTERFERENCE BY MCGEOCH AND MCDONALD (1931)

MCGEOCH AND MCDONALD (1931)		
	AO1 DESCRIPTION	**AO3 EVALUATION**
A	To see what type impact learning a second list of words has on the original list of words	The research only uses 12 participants and therefore it is really difficult to be able to generalise the findings to the wider population. We can't really say that the actions of 12 people is similar to the actions of everyone else. This is a weakness of the study.
M	12 participants took part in the study. They were given a list of words and were tested until they could recall the list with 100% accuracy. They were then given another list. The different types of word lists are shown below. All of the participants were given all of the lists, just in a different order. In this study they were testing retroactive interference.	Research into interference has shown us how different memories, new and old, can distort each other. This can have applications in the court system as eyewitness testimonies are not taken as 100% accurate evidence any more as there is a possibility of the memory being interfered with by other memories.
R	Synonyms seems to have affected recall the most whereas numbers seems to have affected recall the least.	The study was a repeated measures design as participants took part in all conditions (all 6 word lists). This could have led to participants becoming bored and tired of the research meaning that the results have a possibility of being inaccurate.
C	The most similar material produced the worst recall. This shows that interference is strongest when the memories are similar.	



PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

EXAM PRACTICE #8

1) Outline one criticism of research into how interference affects the accuracy of memory. **[2 marks]**

2) Describe the results and conclusion of one study that investigated interference. **[4 marks]**

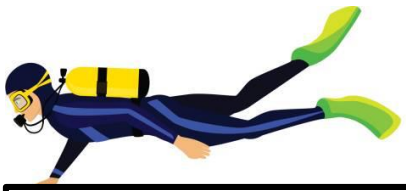
3) Jack recently got a new mobile phone number. His friends asked him for his new number but he kept telling them his old one by accident. Identify what type of interference Jack is showing and explain why. **[3 marks]**

Proactive → **P**ast memories interfering with new memories

Retroactive → **R**ecent memories interfering with old memories

LESSON #13 – A STUDY OF CONTEXT BY GODDEN AND BADDELEY (1975)

<table>
<tr><th colspan="3">GODDEN AND BADDELEY (1975)</th></tr>
<tr><th></th><th>AO1 DESCRIPTION</th><th>AO3 EVALUATION</th></tr>
<tr><td>A</td><td>To see if the context of learning and recall has an impact on how many words we remember</td><td rowspan="2">The research only uses 18 participants and therefore it is really difficult to be able to generalise the findings to the wider population. We can't really say that the actions of 18 people is similar to the actions of everyone else. This is a weakness of the study.</td></tr>
<tr><td>M</td><td>The participants were divers. There were 18 participants in total. All of the divers were given the same list of 36 unrelated words to learn. After listening to the word lists, they were tested to see how many words they could recall. They listened to the words on the beach (dry) or in the water (wet) and then recalled on the beach (dry) or in the water (wet).</td><td>Research into the impact of context on the accuracy of memory has helped the police when they are interviewing witnesses. The police can take the witness back to the scene of the crime to refresh their memory of what happened.</td></tr>
<tr><td>R</td><td>The divers remembered the most words when the learning and recall environment matched (for example beach – beach and ocean – ocean).</td><td rowspan="2">The study was a repeated measures design as participants took part in all conditions (all 6 word lists). This could have led to participants becoming bored and tired of the research meaning that the results have a possibility of being inaccurate.</td></tr>
<tr><td>C</td><td>Learning and recalling information in the same context improves the accuracy of memory.</td></tr>
</table>



PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

EXAM PRACTICE #9

1) Outline one criticism of research into context affects the accuracy of memory. **[2 marks]**

2) Describe the results and conclusion of one study that investigated how context impacts the accuracy of memory. **[4 marks]**

LESSON #14 – A STUDY OF FALSE MEMORIES BY LOFTUS AND PICKRELL (1995)

LOFTUS AND PICKRELL (1995)		
	AO1 DESCRIPTION	**AO3 EVALUATION**
A	To see if false memories could be created in participants through suggestion in order to test the existence of repressed and false memories.	The study used 21 females and only 3 males. This means that the study can be criticised for not representing males and therefore the results cannot be generalised to males.
M	The study included 24 participants (3 males and 21 females) ranging in age from 18 to 53. For each participant, a relative was also contacted. The participants were given 4 short stories about their childhood events that had been obtained from relatives. 3 of the stories were true and one of them was false. The false story was about getting lost in a shopping mall and being rescued by an elderly woman. The participants were asked to read each story and write down what they remembered about each one. A week later, participants were debriefed.	Research into false memories has shown us how people may remember things that may not have actually happened. This has influenced the court system in the UK as eyewitness testimonies are not primarily used anymore. This shows how useful the research has been and is therefore a strength.
R	6 of the participants (25%) recalled the false story fully or partially.	
C	This research suggests that the simple act of imagining an event has the potential of creating and implanting a false memory in a person. Even though only a small number (25%) believe the false memory was true, it is still surprising to see how false memories can be planted.	This study involved planting false memories into people's minds and the false memory used in this study was quite traumatic. This could have caused significant harm and distress to the participants and therefore is a weakness of the study

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

EXAM PRACTICE #10

1) Outline one criticism of research into how false memory affects the accuracy of memory. **[2 marks]**

2) Describe the results and conclusion of one study that investigated false memory. **[4 marks]**

3) Mark, a full-time clothes model was arrested for stealing a woman's handbag from a café. The victim, called Debbie, identified him as stealing her handbag and picked him out from a line-up. He had an alibi and couldn't have done it as he was out of the country working. The victim admitted she had seen a picture of Mark in a magazine she was reading before her handbag was stolen.

Outline what is meant by false memory and how it affected the accuracy of Debbie's memory of the theft of her handbag. **[4 marks]**

KEYWORD	DEFINITION
ENCODING	
CAPACITY	
DURATION	
VISUAL ENCODING	
SEMANTIC ENCODING	
ACOUSTIC ENCODING	
RETRIEVAL	
RECOGNITION	
CUED RECALL	
FREE RECALL	
STORAGE	
MULTI-STORE MODEL	
SENSORY STORE	
SHORT-TERM MEMORY	

KEYWORD	DEFINITION
LONG-TERM MEMORY	
EPISODIC MEMORY	
SEMANTIC MEMORY	
PROCEDURAL MEMORY	
PRIMACY EFFECT	
RECENCY EFFECT	
SERIAL POSITION EFFECT	
RECONSTRUCTIVE MEMORY	
INTERFERENCE	
PROACTIVE INTERFERENCE	
RETROACTIVE INTERFERENCE	
CONTEXT	
FALSE MEMORIES	

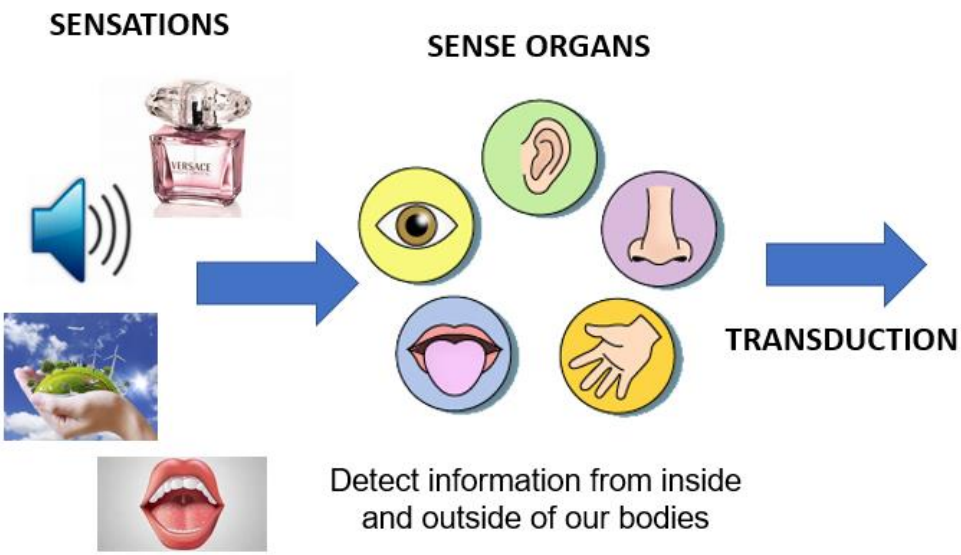
TOPIC 2 - PERCEPTION

What do I need to know for the perception topic?

Content	Additional information
Sensation and perception	The difference between sensation and perception.
Visual cues and constancies	Monocular depth cues: height in plane, relative size, occlusion and linear perspective. Binocular depth cues: retinal disparity, convergence.
Gibson's direct theory of perception – the influence of nature	The real world presents sufficient information for direct perception without inference. Role of motion parallax in everyday perception.
Visual illusions	Explanations for visual illusions: ambiguity, misinterpreted depth cues, fiction, size constancy. Examples of visual illusions: the Ponzo, the Müller-Lyer, Rubin's vase, the Ames Room, the Kanizsa triangle and the Necker cube.
Gregory's constructivist theory of perception – the influence of nurture	Perception uses inferences from visual cues and past experience to construct a model of reality.
Factors affecting perception	Perceptual set and the effects of the following factors affecting perception: culture, motivation, emotion, expectation. The Gilchrist and Nesberg study of motivation and the Bruner and Minturn study of perceptual set.

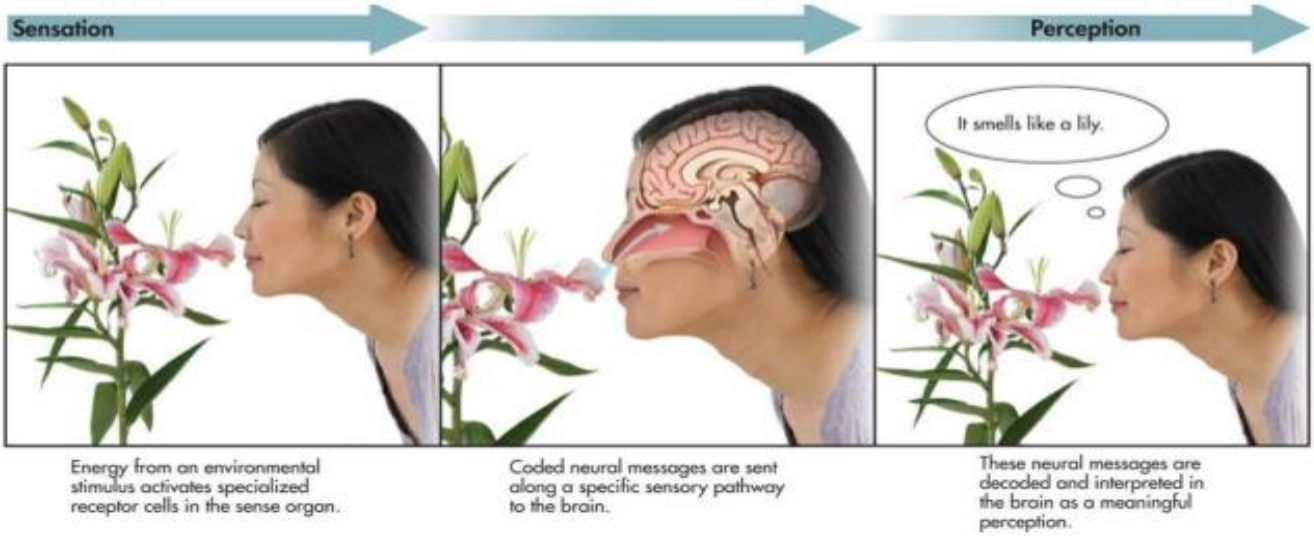
#	Content			
1	Sensations and perception			
2	Depth cues			
3	Visual illusions			
4	Gibson's direct theory of perception (AO1 + AO3)			
5	Gregory's constructive theory of perception (AO1 + AO3)			
6	Factors affecting perception: Culture			
7	Factors affecting perception: Emotions			
8	Factors affecting perception: Motivation: Gilchrist and Nesberg			
9	Factors affecting perception: Perceptual set and expectation: Bruner and Minturn			

LESSON #1 – SENSATION AND PERCEPTION



(GRADE 5-9)
The human sense organs contain receptors that change information into tiny electrical signals and relay information through sensory neurons to the appropriate places within the nervous system.

(GRADE 1-4)
Messages are sent along a specific sensory pathway to the brain.



Sensation
The physical process of collecting data from the environment via the senses.

Perception
The cognitive process of interpreting or making sense of sensory information that we receive. Experience builds our perception.

PERCEPTION	SENSE
Auditory	Hearing
Olfactory	Smelling
Tactile	Feeling
Visual	Seeing
Gustatory	Tasting

EXAM PRACTICE #1
1) Explain the difference between sensation and perception **[3 marks]**

LESSON #2 – DEPTH CUES

MONOCULAR DEPTH CUES - Cues that tell us approximately how far away something is, using one eye.

HEIGHT IN THE PLANE

If you are looking at an open, flat area you normally **perceive** something to be nearer to you if it is lower in the plane (it is nearer to the bottom of the picture).

Objects that are higher in the plane (nearer to the top of the picture), you perceive to be further away.

In this scene the furthest objects, the trees, are also the highest. We know the boats are nearer to us than the trees because they are lower down.

RELATIVE SIZE

The more distant an object is, the smaller the image of that object will be on your retina (the back of the eye where we really begin to "see"). This reducing in size at the eye is part of the reason that people look like ants as you fly in an aeroplane! An object's smaller size on your retina when it is further away from you is called **relative size**.

Paintings take advantage of this fact; in fact they would look very odd if they did not. Note the two people rowing the boat, the closer one is painted much larger than the other.

OCCLUSION

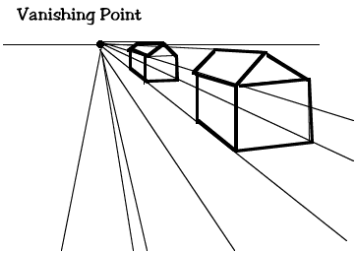
If the image of one object blocks the image of another, the first object is seen as closer.

We assume the tree is in front of the house because it obscures our view of it. It is superimposed on the front of the house, it overlaps it.

LINEAR PERSPECTIVE

Parallel lines that go back into the distance appear to get closer together or join.

Does the image appear like looking down a road to the horizon? At least that is the way it appears to many. Now the image has the appearance of depth just by rotating parallel lines towards each other. Artists use this cue to indicate how a building is oriented, among other things.



LESSON #2 – DEPTH CUES

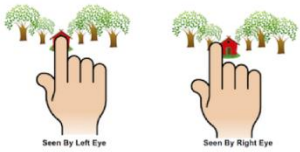
BINOCULAR DEPTH CUES - Cues that tell us precisely how far away something is, using two eyes.

BINOCULAR DEPTH CUE 1: RETINAL DISPARITY

Hold your finger out in front of you at arm's length. Close your left eye and consider what you see. Open your left and close your right and consider what you see.
How similar are the two images?

Now do the same again but hold your finger closer to your face.
How similar are the two images this time?

The difference between the two images when something is closer to you is called **retinal disparity**. If items are further away there is less of a difference. This is a binocular depth cue.

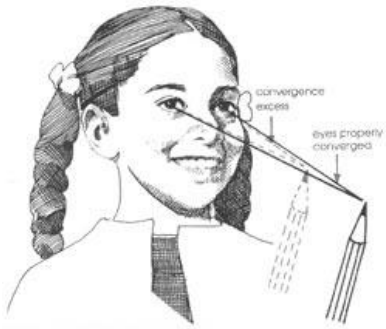


Because your retinas are separate from one another and about 2.5 inches apart, they see images differently, especially when the images are closer to your eyes.

BINOCULAR DEPTH CUE 2: CONVERGENCE

Now hold your finger out in front of you and stare at it with both eyes. Bring your finger in towards your face slowly whilst staring at it. What happens to your eyes?

The muscles in our eyes have to work harder when looking at something close to us. This is called **convergence**.



Monocular depth cues
Cues that tell us approximately how far away something is, using one eye.

Binocular depth cues
Cues that tell us more precisely how far away something is, using both eyes.

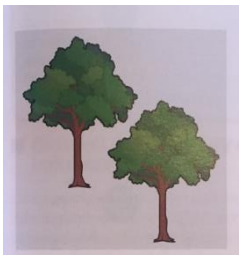
EXAM PRACTICE #2

1) What is the difference between a monocular and binocular depth cue? **[3 marks]**

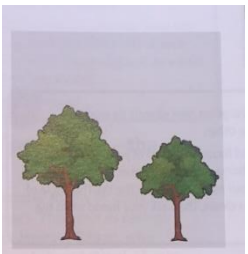
2) Outline how retinal disparity and convergence are used to perceive distance and depth **[6 marks]**

MONOCULAR = MONO (ONE) = MONOCLE
BINOCULAR = BI (TWO) = BINOCULARS!

WHAT DO MONOCULAR DEPTH CUES LOOK LIKE IN REAL LIFE?

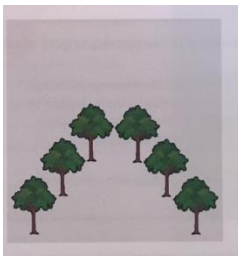


HEIGHT IN PLANE



RELATIVE SIZE

OCCLUSION



LINEAR PERSPECTIVE

LESSON #2 – DEPTH CUES

Height in plane (objects that are further away appear higher up in the picture)

Relative size (objects appear larger when they are closer)

Occlusion (the white car is covering some of the shops, suggesting it is closer and in front of them)

Linear perspective (we can tell the lines are parallel as they appear to become closer in the distance)

LESSON #3 – VISUAL ILLUSIONS

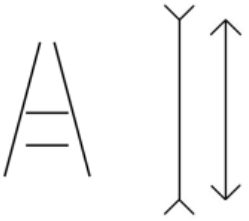
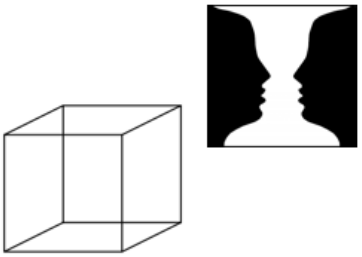
Size constancy

This means that we keep our original perception of the size of an object, even when the information received by the eye changes.

For example, if you look down from a tall building at the people below, they appear really tiny but we know they are not. People are the same size whether they are far away from us or up close.

Visual illusions

Visual illusions happen when our visual perception is tricked into seeing something inaccurately because the brain uses inappropriate strategies for interpreting the sensory information it is receiving.

EXPLANATION	DESCRIPTION (WHY IT WORKS)	VISUAL ILLUSIONS
Misinterpreted depth cues	Constancy scaling can go wrong. We might wrongly apply the 'rules' of depth perception. Sometimes our brain makes out distance when it is not actually there, making us apply the rule of constancy when we should not. An example would be the **Ponzo illusion** (the converging lines give the impression of distance and our brain mentally enlarges the line at the top because it is further away) or the **Muller-Lyer illusion** (the top line is seen a smaller than the bottom line because we perceive the top line to look like the outside of a building whereas the bottom line is like the inside of a building).	
Ambiguity	When there are different interpretations of the same image, the brain cannot decide which interpretation to choose so it will occasionally 'flip' between the two. An example would be the **Necker cube** (it can be seen as facing upwards to the right or downwards to the left) or Rubin's vase (people can normally see a vase or two faces).	
Fiction	A visual illusion where the person starts to 'see' something in the image that isn't actually there. The image might 'suggest' a certain aspect of the figure is present when in reality it isn't. An example would be the **Kanizsa triangle**. The image suggests there is a second triangle even though there is nothing there.	

EXAM PRACTICE #3

1) Explain what the ambiguous visual illusions Rubin's vase and Necker cube tell us about perception **[2 marks]**

2) What is meant by the terms 'size constancy' and 'misinterpreted depth cues'? [4 marks]

3) Choose two visual illusions and explain how each of them causes misperception **[6 marks]**

LESSON #4 – GIBSON'S DIRECT THEORY OF PERCEPTION

Gibson stated that sensation and perception are actually the **same** thing.

He said that everything in our visual field gives us all the information we need to judge **depth**, **distance** and **movement** without the need for past experiences.

There are **three** main parts of his theory: optic flow patterns, motion parallax and the influence of nature.

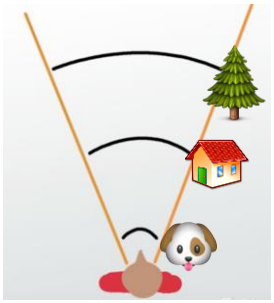
1. OPTIC FLOW PATTERNS

When we are moving towards a fixed point, it stays stationary while the rest of our view seems to rush by.

This is known as an **optic flow**.

If our brain does not see this optic flow, it struggles to recognise we are moving.

2. MOTION PARALLAX



When we are moving, objects that are **closer** to us in our visual field appear to be moving **faster** than those that are further **away** from us.

For example, if you were in a car driving past the dog, shed and tree you would notice that the dog moves quicker than the shed and the shed moves quicker than the trees.

3. INFLUENCE OF NATURE

We do not need to learn how to perceive the world around us, our abilities are **innate**.

The eye can detect very fine changes in light, texture, movement and depth without the need for past experience.

This is why the baby wouldn't crawl off the edge of the 'cliff' – we are **born** with our perception.

STRENGTHS	WEAKNESSES
One strength is that research provides good support for Gibson's theory The visual cliff experiment shows that we do not need to learn how to perceive the world around us as they did not crawl off the edge. This is a strength because it shows that we do not always need to use past experience to perceive the world around us. The evidence supports Gibson's idea that perception is innate.	One weakness is that perceptual errors are not easily explained by Gibson's theory. Visual illusions are good examples of when our brain makes 'perceptual errors' and draws wrong conclusions about what we are looking at. This is a weakness because Gibson said there is no need for processing the information we receive about size, shape and distance, yet evidence from illusions shows sensation and perception to be separate processes and therefore Gibson's theory is limited as it cannot explain this.

LESSON #5 – GREGORY'S CONSTRUCTIVIST THEORY OF PERCEPTION

NATURE = We are born with our thoughts, feelings and behaviours. We **perceive** based on what we are born with (**GIBSON'S THEORY**)

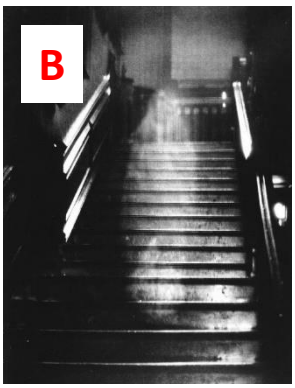
NURTURE = The environment shapes our thoughts, feelings and behaviours. We **perceive** based on what we have experienced (**GREGORY'S THEORY**)

Gregory stated that we perceive based on our past experiences.

We make sense of the world around us by building our perceptions based partly on incoming information and using what we know about the world.

Gregory would say that some people see a Dalmatian in image A if they have had experiences with dogs.

He would also say some people see a ghost in image B if they believe in ghosts whereas others will simply see mist/smoke.



1. INFERENCE

A lot of what we perceive in the world around is is incomplete and ambiguous – it could mean more than one thing.

For this reason, our brain will 'fill in the gaps' using inference. The brain uses the information available to make a guess about what our eyes are seeing.

2. VISUAL CUES

The brain has help when making inferences, in the form of visual cues.

Our perception is usually accurate but sometimes the way we interpret things turns out to be wrong, for example when looking at visual illusions.

STRENGTHS	WEAKNESSES
A strength of Gregory's theory is that there is research that supports it. Seagall et al. found that people in non-Western cultures don't fall for the Muller-Lyer illusion, they say that both the lines are the same length. This is a strength of Gregory's theory because it shows that our perception **must** be influenced by our experience, otherwise everyone would fall for the visual illusion.	A weakness of Gregory's theory is that there is research that contradicts it. In the visual cliff experiment, babies did not crawl over the cliff edge showing that some elements of perception **must** be innate. This is a weakness of Gregory's theory because he believes we learn perception but if that was true the babies would have crawled over the edge.

COMPARING GIBSON'S AND GREGORY'S THEORY

GIBSON	GREGORY
Emphasises the role of **nature** in perceptual processes	Emphasises the role of **nurture** in perceptual processes
Sees sensation and perception as the **same** thing	Sees sensation and perception as **separate** processes
Has **difficulty** in explaining cultural differences in perception	**Can** explain cultural differences in perception
Model helps to understand the **real world**	Model helps to understand how **visual illusions** work
Can explain examples of innate perception	Has **difficulty** to explain examples of innate perception

EXAM PRACTICE #4

1) Explain the role of motion parallax in everyday perception. **[3 marks]**

2) Outline the influence of nature on the perception of depth and distance. Refer to Gibson's direct theory in your answer **[3 marks]**

3) Describe and evaluate Gibson's direct theory of perception **[9 marks]**

EXAM PRACTICE #5

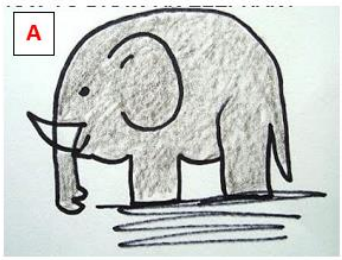
1) Evaluate Gregory's constructivist theory of perception. **[5 marks]**

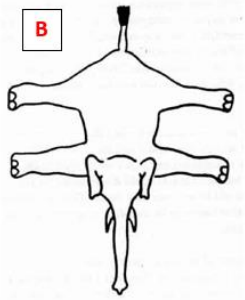
2) Explain the role that past experience plays in perception according to Gregory. **[3 marks]**

3) Explain how Gregory's constructivist theory has increased our understanding of perception**. [6 marks]**

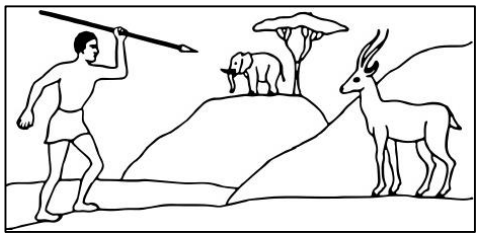
LESSON #6 – FACTORS AFFECTING PERCEPTION - CULTURE

CULTURE
Beliefs and expectations that surround us. We are influenced by our culture and there are many different ones. Culture can affect our perception.





We are used to cartoon drawings in picture books in a western society. A child from a traditional tribal society is not likely to have had this exposure and so only knows it as a whole animal so this is what they draw.

HUDSON (1960)		
	AO1 DESCRIPTION	**AO3 EVALUATION**
A	To see if people from different cultures interpreted information in pictures differently using depth cues.	One weakness of Hudson's research is that the people used in the research might not have understood the instructions. For example, the research used translators to tell people to draw an elephant however the translator might have changed the instructions without realising. This is a weakness because these communication problems might have meant the instructions were unclear to the participants.
M	He showed 2D images to people from different cultures and educational backgrounds and asked them: 1) What do you see? 2) What is the man doing? 3) What is closer to the man, the elephant or the antelope? 	
R	Schooled participants were more likely to perceive depth than unschooled participants White participants were more likely to perceive depth than black participants.	One weakness of Hudson's research is that it was conducted a long time ago. For example, the research was conducted in 1960 which is almost 60 years ago. This is a weakness because if the research was replicated today, there might be different results due to further differences in cultures.
C	Culture seems to play a role in our perception. Children who are schooled are used to 2D images whereas unschooled children are not.	

EXAM PRACTICE #6

1) Outline the effect of culture on perceptual set. **[3 marks]**

2) Outline **two** evaluations of a study that has investigated the effect of culture on perception. **[4 marks]**

3) Describe and evaluate the role that culture plays in perception**. [6 marks]**

LESSON #7 – FACTORS AFFECTING PERCEPTION - EMOTION

EMOTION
A strong feeling or mood that encourages us to behave in a particular way. For example, if we feel scared, we are much more prepared to deal with an attack. If we are hungry, we try to find food.

MCGINNIES (1949)		
	AO1 DESCRIPTION	**AO3 EVALUATION**
A	To see if our emotions impact our perception by seeing if it takes us longer to say words that make us feel embarrassed.	A strength of this research is that it used an objective way of measuring arousal. For example, instead of asking the participants about their arousal, they measured it using galvanic skin response (GSR). This is a strength because it means arousal can be measured accurately instead of relying on the participant's answers as they could lie.
M	16 students took part (8 male, 8 female). They were shown several different words, one flashed on the screen at a time and the participants were asked to read them out. There were 'neutral' words such as apple or dance and there were 'taboo' words such as penis or bitch. Their emotional arousal was measured using galvanic skin response (GSR). **APPLE PENIS DANCE BITCH**	A weakness of this research is that it might not have measured arousal but embarrassment instead. For example, the participants might have taken longer to say the taboo words because they were embarrassed, not because of their perception. This is a weakness because the results might be inaccurate.
R	Participants took longer to recognise and say the taboo words and their emotional arousal was higher when reading the taboo words.	
C	Emotional does affect our perceptual set. The higher the anxiety, the longer it takes us to perceive because our brain blocks out the information.	

EXAM PRACTICE #7

1) Outline the effect of emotion on perceptual set. **[3 marks]**

2) Outline **two** evaluations of a study that has investigated the effect of emotion on perception. **[4 marks]**

3) Describe and evaluate the role that emotion plays in perception**. [6 marks]**

LESSON #8 – FACTORS AFFECTING PERCEPTION - MOTIVATION

MOTIVATION
Forces that 'drive' our behaviour. It encourages us to act, for example if we are hungry we will seek food.

KEY STUDY - IMPORTANT

GILCHRIST AND NESBERG (1952)

	AO1 DESCRIPTION	AO3 EVALUATION
A	To see if food deprivation would make food appear brighter	A strength of this research is that similar studies have found similar results. For example, Sanford found that food-deprived participants were more likely to see vague pictures as food (i.e. a brown blob was perceived to be a hamburger). This is a strength because similar results increase the validity of Gilchrist and Nesberg's study.
M	The study used two groups of people. The first group had 26 students who volunteered to go without food for 24 hours and the second group had participants who ate as normal. They were shown four slides of a meal (shown below) for 15 seconds each. After each slide was shown, the participants were asked to adjust the lighting on a new photo so it looked the same as the original. 	A weakness of this research is that the study involved depriving people of food. It may have caused participants some discomfort to take part and they might have felt like a 'let down' if they ate something. This is a weakness because depriving people of food for psychology could be considered to be an ethical issue.
R	The food-deprived participants adjusted the lighting so it was brighter than before. The other participants adjusted it similar to the first photo.	
C	Hunger is a motivating factor that affects perception. Being deprived of basic needs makes us sensitive to food-related pictures, making them appear brighter. **KEY STUDY - IMPORTANT**	A weakness of this research is that the study had two different groups of participants. It might be that the food-deprived participants perceived things differently to the other group, whether they were food deprived or not. This is a weakness because the results could be inaccurate.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

EXAM PRACTICE #8

1) Outline the effect of motivation on perceptual set. **[3 marks]**

2) Outline **two** evaluations of a study that has investigated the effect of motivation on perception. **[4 marks]**

3) Describe and evaluate the role that motivation plays in perception**. [6 marks]**

LESSON #9 – FACTORS AFFECTING PERCEPTION - EXPECTATION

EXPECATION
Our belief about what is likely to happen, based on past experience. Expectation impacts our perception because you are more likely to notice some things because you are expecting them to happen.

KEY STUDY - IMPORTANT

BRUNER AND MINTURN (1955)

	AO1 DESCRIPTION	AO3 EVALUATION
A	To see whether expectation is an important factor in perception.	A strength of this research is that is has real life application. For example, in Bartlett's War of the Ghosts study, it explains why the participants changed the story, based on their expectations. This is a strength because if we can see it happening in real life it increases the credibility of the theory.
M	Bruner and Minturn showed participants an ambiguous figure (looks like a B or 13). The first group of participants were shown the figure in between A and C. The second group of participants were shown the figure in-between 12 and 14. A B C — B or 13? — 12 13 14	A weakness of this research is that the study had two different groups of participants. It might be that the participants who read 13 had 13 as their lucky number or the group who read B might have family/friends who have names beginning with B. This is a weakness because there are individual differences, we can't say expectation impacted perception.
R	The group that saw the figure in between A and C read it as a B. The group that saw the figure in between 12 and 14 read it as 13.	
C	Expectation is an important influence on perception. **KEY STUDY - IMPORTANT**	A weakness of this research is that it was conducted a long time ago. For example, the research was conducted in 1952 which is over 60 years ago. This is a weakness because we cannot say the similar findings would happen if we repeated this research.

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

EXAM PRACTICE #9

1) Outline the effect of motivation on perceptual set. **[3 marks]**

2) Outline **two** evaluations of a study that has investigated the effect of motivation on perception. **[4 marks]**

3) Describe and evaluate the role that motivation plays in perception**. [6 marks]**

KEYWORD	DEFINITION
SENSATION	
PERCEPTION	
BINOCULAR DEPTH CUE	
MONOCULAR DEPTH CUE	
HEIGHT IN PLANE	
RELATIVE SIZE	
OCCLUSION	
LINEAR PERSPECTIVE	
CONVERGENCE	
RETINAL DISPARITY	
VISUAL ILLUSION	
AMBIGUITY	
FICTION	
MISINTERPETED DEPTH CUES	

KEYWORD	DEFINITION
SIZE CONSTANCY	
GIBSON'S THEORY OF PERCEPTION	
MOTION PARALLAX	
OPTIC FLOW PATTERNS	
NATURE	
GREGORY'S THEORY OF PERCEPTION	
INFERENCE	
VISUAL CUES	
NURTURE	
PERCEPTUAL SET	
CULTURE	
EMOTION	
MOTIVATION	
EXPECTATION	

TOPIC 3 - DEVELOPMENT

What do I need to know for the development topic?

Content	Additional information
Early brain development	A basic knowledge of brain development, from simple neural structures in the womb, of brain stem, thalamus, cerebellum and cortex, reflecting the development of autonomic functions, sensory processing, movement and cognition. The roles of nature and nurture.
Piaget's stage theory and the development of intelligence The role of Piaget's theory in education	Piaget's Theory of Cognitive Development including concepts of assimilation and accommodation. The four stages of development: sensorimotor, pre-operational, concrete operational and formal operational. Application of these stages in education. Reduction of egocentricity, development of conservation. McGarrigle and Donaldson's 'naughty teddy study'; Hughes' 'policeman doll study'.
The effects of learning on development	Dweck's Mindset Theory of learning: fixed mindset and growth mindset. The role of praise and self-efficacy beliefs in learning. Learning styles including verbalisers and visualisers. Willingham's Learning Theory and his criticism of learning styles.

#	Content			
1	Early brain development (1)			
2	Early brain development (2)			
3	Piaget's theory of cognitive development			
4	Piaget's stages of cognitive development (AO1)			
5	Piaget's stages of cognitive development (AO3)			
6	Hughes' policeman doll study (AO1 + AO3)			
7	McGarrigle + Donaldson's naughty teddy study (AO1 + AO3)			
8	Dweck's mindset theory of learning (AO1)			
9	Dweck's mindset theory of learning (AO3)			
10	Self-efficacy and praise			
11	Learning styles			
12	Willingham's learning theory			

LESSON #1 – EARLY BRAIN DEVELOPMENT

CORTEX

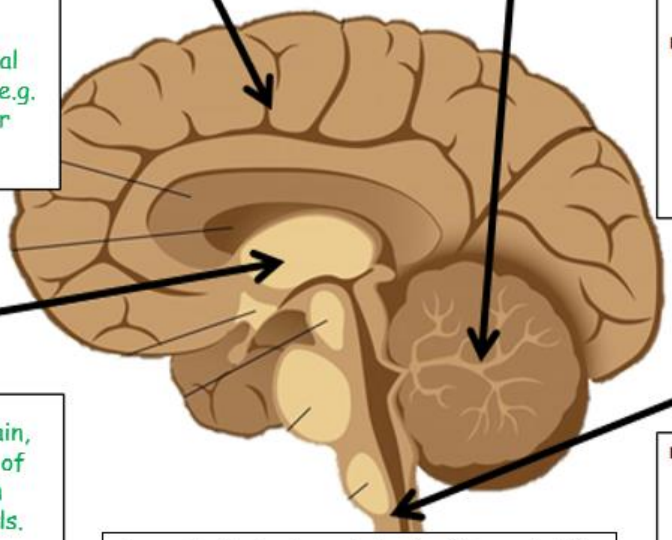
Definition:
. The outer covering of the brain where mental processing takes place.

Functions:
Thinking/cognition in frontal cortex, sensory processing (e.g. visual/ auditory) and motor processing.

CEREBELLUM

Definition:
The 'little' brain at the base of the brain above the spinal cord.

Functions:
Plays a very important role in co-ordination of movement e.g. balance, and co-ordinates sensory info with motor activity (sensorimotor)



THALAMUS

Definition:
Located deep inside the brain, the thalamus acts as a hub of information for the brain receiving and sending signals.

Functions:
Receives sensory signals from the retina in the eye and sends signals onto the visual area. Co-ordinates motor signals, sending info from the motor area.

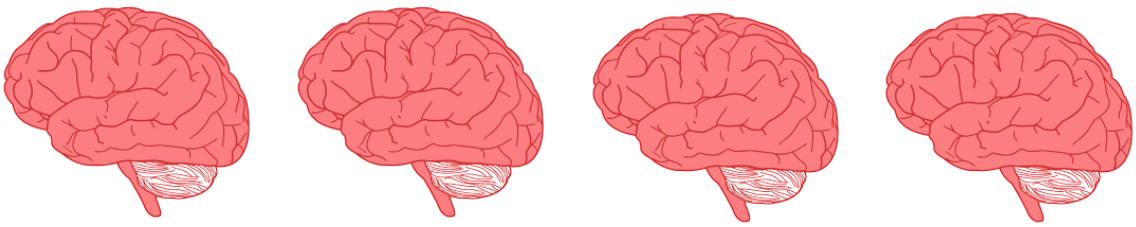
BRAIN STEM

Definition:
Part of the brain that connects to the spinal cord

Functions:
Carries motor and sensory nerves between brain and rest of the body via spinal cord
Controls basic life functions (autonomic) e.g. heart beat

Summarise the development of each of the areas of the brain. Which is the most developed/least developed at birth?
Brain stem most highly developed at birth. cortex is still fairly basic and goes on developing throughout life and cerebellum is one of the last parts to mature.

CORTEX = OUTER **CO**VER, **CO**GNITION
THALAMUS = **S**IGNALS (MOTOR AND SENSORY)
BRAIN STEM = **B**REATHING, **B**ASIC FUNCTIONS
CEREBELLUM = **C**O-ORDINATION, **M**OVEMENT



EXAM PRACTICE #1

1) Identify one part of the brain that has been shown to affect the development of movement **[1 mark]**

2) Using your knowledge of the part of the brain named above, explain how it affects movement **[3 marks]**

3) Briefly explain the function of the thalamus **[3 marks]**

NATURE
Refers to genetic influences and characteristics you inherit from your ancestors

NURTURE
Refers to all other influences e.g. how you were raised, your experience and your environment in general

SOME EXAMPLES… NATURE OR NURTURE?

A number of studies have shown that the IQs of identical twins (who share 100% of the same genes) are very similar.

In an animal study, rats that lived in a group with other rats and had toys to play with developed bigger brains and better problem-solving skills compared to rats who were kept alone without toys.

Babies are not able to talk at birth and learn this ability later on.

It is well known that mothers who smoke give birth to smaller babies. Smoking affects the size of the brain as well as the body because nicotine slows down growth.

Psychologists have found that newborn babies are able to recognise faces as soon as they are born.

A study looked at a pair of identical twins who were raised apart from the age of 4 weeks. When they met for the first time aged 39, they were both very similar. They both had the same car, went on holiday to the same place and both bit their nails.

Babies who heard 'The Cat in the Hat' read to them while they were in the womb sucked more when this was read to them after birth compared with a passage from a different book.

If pregnant mothers come into contact with German measles (rubella) the baby may encounter brain damage, most especially hearing loss if the mother becomes ill during the first 20 weeks of pregnancy.

EXAM PRACTICE #2

1) Outline the difference between nature and nurture **[3 marks]**

2) Explain how nurture might affect the development of the brain **[6 marks]**

LESSON #3 – PIAGET'S THEORY OF COGNITIVE DEVELOPMENT

Who? Jean Piaget
What did he do? He worked on some of the first IQ tests and began to notice that children of a similar age tended to make the same *kind* of mistakes.
This led him to his theory of **cognitive development** as he realised that the way children think changes as they get older.

SCHEMA

As children develop, they construct more detailed mental representations of the world. These are schemas. A schema is a mental structure containing the information we have about something e.g. what a holiday is.

COGNITIVE DEVELOPMENT

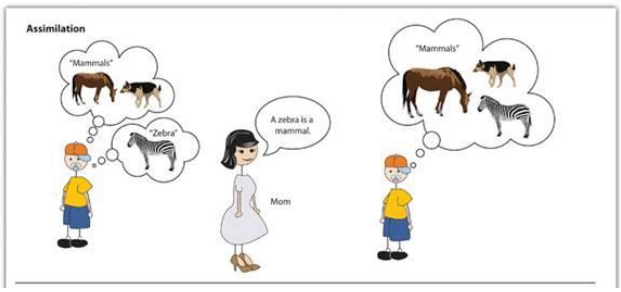
Refers to the way a persons knowledge, thinking and intelligence changes as they get older. In psychology, the term cognitive is used to refer to mental processes, especially thinking.

SCHEMAS DEVELOP THROUGH ASSIMILATION AND ACCOMMODATION...

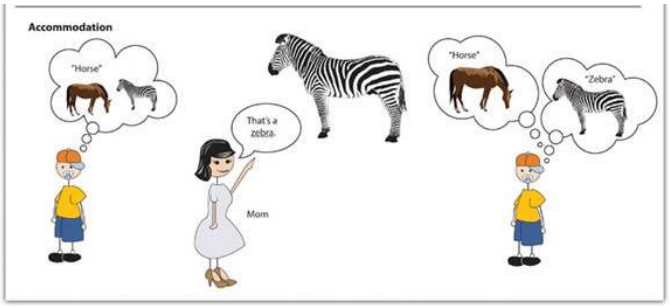
	DEFINITION	EXAMPLE
ASSIMILATION	A form of learning that takes place when we add new information to an existing schema. The new information does not radically change our understanding of the topic.	A child's schema of a car changes slightly to include different colour cars and a car that can fit less people in (e.g. a sports car)
ACCOMMODATION	A form of learning that takes place when we acquire new information that changes our understanding of a topic to the extent that a new schema is formed to cope with the new situation.	A child gets to ride in a tractor which has some similarities to the car (moves the same, same colour) but is also different to the car (much bigger tyres and make a different noise). A big change to the car schema is required or a new tractor schema is formed.

EXAM PRACTICE #3

1) Explain the difference between assimilation and accommodation **[3 marks]**
2) Explain what is meant by schema **[2 marks]**
3) Describe and evaluate Piaget's theory of cognitive development **[9 marks]**



ASSIMILATION



ACCOMMODATION

PIAGET'S STAGE THEORY: KEY SKILLS

Piaget believed that there are four stages to children's intellectual development. According to Piaget, children develop these skills when they are mentally ready to do so.

CONSERVATION

Children struggle to realise that the glasses contain the same amount of water, even though one is taller.

CONSERVATION
Knowing that the amount of something stays the same even though its appearance may change

EGOCENTRISM

When asked to describe what someone else's view of the mountain would look like, children struggle.

EGOCENTRISM
Not being able to see things from another person's point of view

OBJECT PERMANENCE

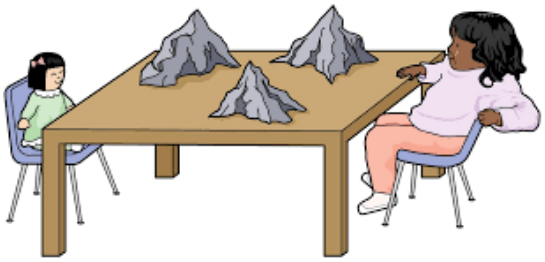
If a child is shown an object and then it is taken away from their view, they think it has stopped existing and don't know where to find it.

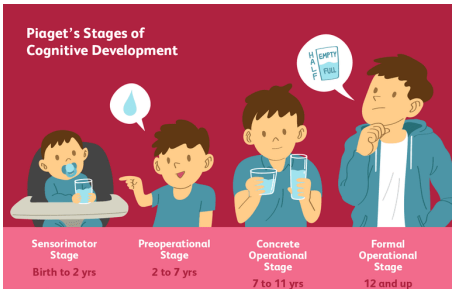
OBJECT PERMANENCE
Knowing that objects still exist even when they are out of sight

STAGE	AGE FRAME	SUMMARY OF STAGE
SENSORIMOTOR STAGE	0-2 years	Children learn about the world through their senses (sensori-) and by doing things (motor) co-ordinated by the cerebellum. Child develops object permanence at around 8 months old (knowing that object still exists even when it is out of sight).
PRE-OPERATIONAL STAGE	2-7 years	Children are now more mobile but do not think in a consistently logical way. The main feature of this stage is that children are egocentric. Children under 7 years tend to view the world only from their own perspective (e.g. three mountain task).
CONCRETE OPERATIONAL STAGE	7-11 years	Children now perform better on tasks which tests for egocentrism i.e. they understand others' perspectives. They also develop the ability to conserve (e.g. liquid conservation experiment). Children still struggle to imagine objects or situations they cannot see.
FORMAL OPERATIONAL STAGE	11+ years	Children are able to focus on the form of an argument and not be distracted by its content. Children can now solve problems in systematic ways e.g. the pendulum task by keeping the length of string the same whilst changing the weights rather than changing both at the same time.

LESSON #5 – PIAGET'S STAGES OF COGNITIVE DEVELOPMENT (AO3)

PIAGET'S STAGES OF COGNITIVE DEVELOPMENT	
STRENGTHS	**WEAKNESSES**
There is evidence to support the view that children go through stages of cognitive development as they get older. For example, in the research it suggests that children do change the way in which they think as they get older. This is a strength of Piaget's theory as it seems that the overall concept of stages in cognitive development is correct.	Piaget's theory is based on data collected from small samples of children. For example, Piaget used his own children within his research. This means that the sample is unrepresentative and there could be researcher bias.
Piaget's research has had a major impact on early years education and his methods of testing children can be easily replicated. For example, his experiments were new and fun and used simple resources that people could repeat themselves. This is a strength because it shows how the theory can be applied to real-life and many of his ideas are still used today.	Piaget seemed to over-estimate what older children are capable of. For example, Piaget suggested that by the age of 11 children should be able to think in abstract way. However, research has gone against this. This suggests that Piaget was optimistic about what children of 11 could do in the formal operational stage (some may never actually reach it).





EXAM PRACTICE #4

1) Use your knowledge of conservation to explain how the thinking of a 7-year old could differ from a 5-year old child **[3 marks]**

2) Name all four of the stages in Piaget's cognitive development theory **[2 marks]**

3) Describe and evaluate Piaget's theory of cognitive development **[9 marks]**

LESSON #6 – HUGHES' POLICEMAN DOLL STUDY (AO1 + AO3)

KEY STUDY - IMPORTANT

HUGHES (1975)

	AO1 DESCRIPTION	AO3 EVALUATION
A	To see if children can see things from another person's point of view, at an earlier age than Piaget's theory suggested.	One strength of this study is that the test used to test egocentrism made better sense to the children than Piaget's version (mountain task). The policeman task was a problem that children are more likely to encounter in everyday life compared to the mountain task. This is a strength because It means Hughes can assess children's capabilities better than Piaget.
M	**STAGE 1**: The children were shown a model with 2 intersecting walls that formed a cross. A policeman doll was placed in the model, the children were asked to hide a boy doll so the policeman couldn't see him. The correct answer is section A or C. **STAGE 2**: This was then repeated in a different position (the policeman moved to point X) to check the task had been understood. If the child made mistakes they were allowed to try again. The correct answer is section B or D. **STAGE 3**: Then the actual experiment began, another policeman doll was placed on the model (at point Y) and the child was asked to hide the boy doll so neither policeman could see it. The correct answer is section C.	One weakness is that the researcher might have unconsciously hinted about the correct answer. The person doing the study with the children might have given subtle clues about where the boy doll could be hidden. Researcher sometimes do this without realising, they might be staring at the correction section.
R	90% of children were able to hide the doll successfully from the policeman doll. According to Piaget, they shouldn't be able to do this.	
C	Children **can** see things from someone else's point of view if the situation is familiar to them, and the task makes sense. This therefore shows that Piaget underestimated younger children's abilities. However, there did continue to be age differences, suggesting Piaget is right in his view that the way children think changes with age.	One weakness of the study has sample bias because all of the children who took part were from the same area (Edinburgh). The reason the older children did better than the younger children might be due to differences in their educational background.

KEY STUDY - IMPORTANT

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!

THE METHOD OF THIS STUDY IS EXPLAINED BETTER ON THE NEXT PAGE

EXAM PRACTICE #5

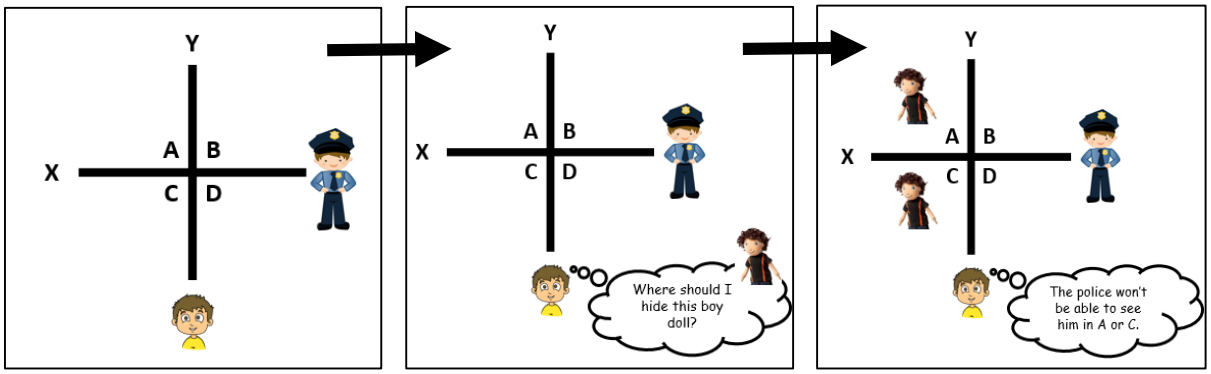
1) Briefly outline what the participants were asked to do in Hughes' policeman doll study **[2 marks]**

2) Explain one evaluation of Hughes' 'policeman doll' study **[3 marks]**

3) Describe and evaluate Hughes' policeman doll study **[9 marks]**

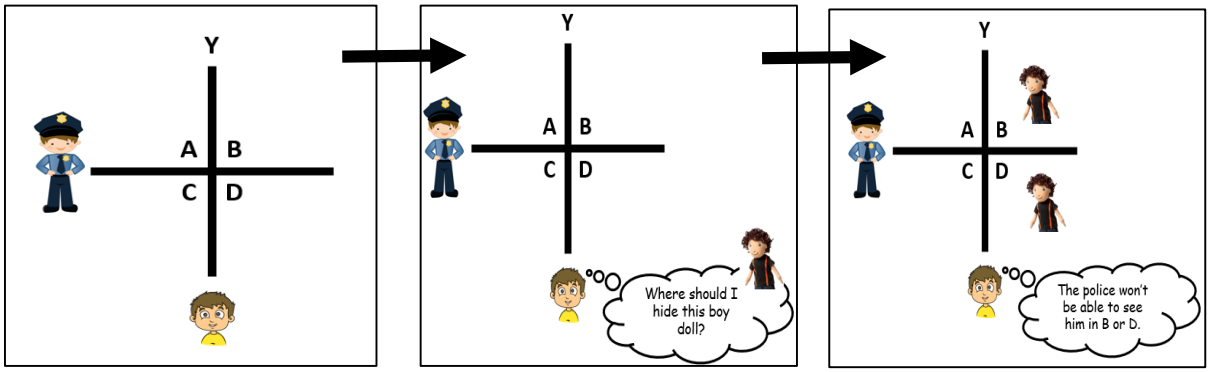
METHOD OF HUGHES' POLICEMAN DOLL STUDY IN PICTURES

STAGE 1



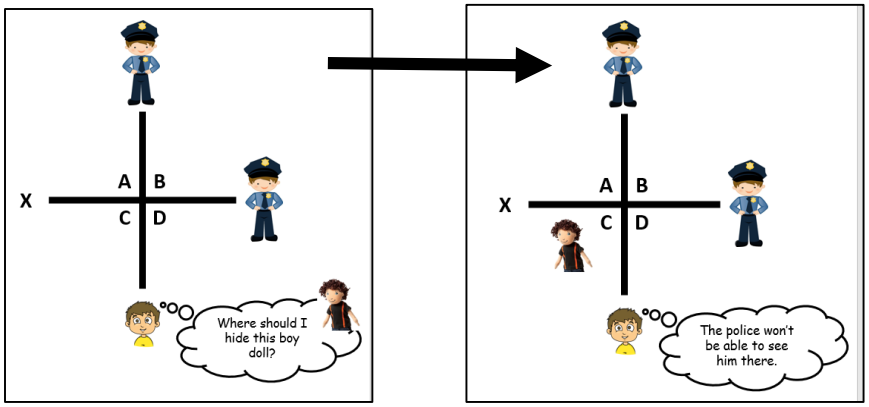
STAGE 1: The children were shown a model with 2 intersecting walls that formed a cross. A policeman doll was placed in the model, the children were asked to hide a boy doll so the policeman couldn't see him. The correct answer is section A or C.

STAGE 2



STAGE 2: This was then repeated in a different position (the policeman moved to point X) to check the task had been understood. If the child made mistakes they were allowed to try again. The correct answer is section B or D

STAGE 3



STAGE 3: Then the actual experiment began, another policeman doll was placed on the model (at point Y) and the child was asked to hide the boy doll so neither policeman could see it. The correct answer is section C.

LESSON #7 – MCGARRIGLE AND DONALDSON TEDDY STUDY (AO1 + AO3)

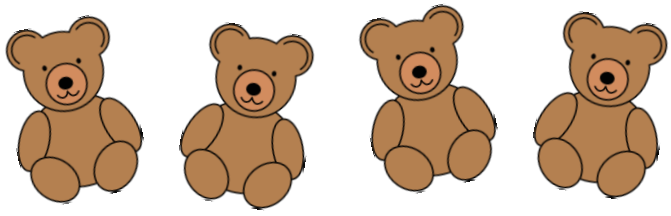
KEY STUDY - IMPORTANT

MCGARRIGLE AND DONALDSON (1974)

	AO1 DESCRIPTION	AO3 EVALUATION
A	The researchers wanted to see if Piaget's results were due to the fact that the children saw the counters being changed and therefore assumed that this **deliberate** change meant there actually was a change in the number of counters.	The children used in the study were tested by an adult stranger in an unusual setting to normal. Perhaps if these were usual to the children, more children between 4 and 6 years old would be able to conserve like Piaget thought.
M	There were 80 children in the study, all from Edinburgh in Scotland. 40 of these children were at nursery schools (average age 4 years 10 months) and 40 were from primary school (average age 5 years 10 months). Children were introduced to a naughty teddy who was likely to escape from his box and try to mess up the toys and spoil the game. The children were shown 2 rows of counters, one with four red counters and one with four white counters. The teddy jumped out of his box and pushed the counters in one row, in a chaotic fashion. He transformed the display by making one row look smaller Before and after the transformation, each child was asked the same question – "Is there more in this row, this row or are they the same?"	One weakness of the study has sample bias because all of the children who took part were from the same area (Edinburgh). The reason the older children did better than the younger children might be due to differences in their educational background.
R	41% of the children gave the correct answers (the rows are the same) if the display was changed deliberately 68% of the children gave the correct answers (the rows are the same) if the display was changed accidentally by the teddy Primary school children got the correct answer more than nursery school children	Over 30% of children still failed to conserve when shown the naughty teddy which means that individual differences must be taken into account. When replicated by a different psychologist results were not as high as McGarrigle and Donaldson had found.
C	The traditional method of testing conversation underestimated what children can do. In this study, many of the nursery school children did conserve quantity. Piaget said children couldn't do this. There were still age differences. The primary school children did better than the nursey children, suggesting Piaget's ideas about how thinking changes as we get older is right.	

KEY STUDY - IMPORTANT

PICK 2 EVALUATION POINTS TO REMEMBER – NOT ALL 3!



EXAM PRACTICE #6

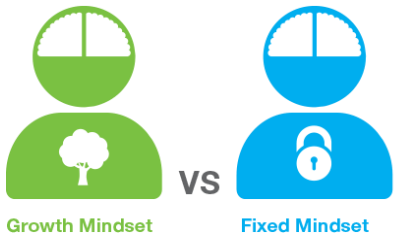
1) Briefly outline what the participants were asked to do in McGarrigle and Donaldson's naughty teddy study **[2 marks]**

2) Explain one evaluation of McGarrigle and Donaldson's naughty teddy study **[3 marks]**

3) Describe and evaluate McGarrigle and Donaldson's naughty teddy study **[9 marks]**

LESSON #8 – DWECK'S MINDSET THEORY OF LEARNING (AO1)
LESSON #9 – DWECK'S MINDSET THEORY OF LEARNING (AO3)

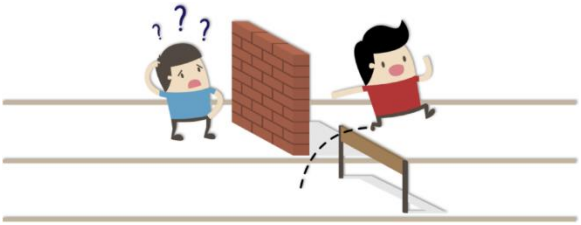
FIXED MINDSET Believing that achievements are due to abilities we are born with. If you can't do something, there is no point trying again because you simply don't have the ability. If you have a fixed mindset, you give up after failing.	GROWTH MINDSET Believing that achievements are due to abilities we develop over time. If you can't do something, you should practice because you will eventually succeed. If you have a growth mindset, you see failure as a challenge to try again.
Intelligence is fixed in our genes	Intelligence is something that you can always improve
Doing well in a test is due to the intelligence we were born with	Doing well in a test is due to the effort we have put in
Failure is a sign that you should give up	Failure is a sign that you should practice and try again
Feel good when they are doing well	Feel good when they are working hard



EXAM PRACTICE #7

1) Using an example of a behaviour, distinguish between a fixed and growth mindset **[4 marks]**

2) Describe and evaluate Dweck's mindset theory of learning **[9 marks]**



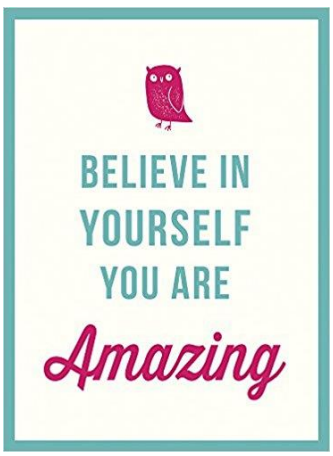
AO3 EVALUATION
Someone's mindset is normally assessed using questionnaires which can lead to untruthful or rushed answers
Someone's mindset is normally assessed using questionnaires which are easy to distribute and quick to fill in
You can teach someone to have a growth mindset and it can lead to improved performance

LESSON #10 – SELF-EFFICACY AND PRAISE

Praise

Praise is a reward that increases motivation. It is a way of showing someone they have done something good.

- If you do something and you are praised for it, it makes you feel good and encourages you to repeat the behaviour.
- Increases your self-esteem (you feel better about yourself) and increases your motivation to continue.
- It is important to praise effort and not performance because students can change their effort but not always their performance.
- If you see someone being praised for their performance better than yours, it is demotivating because you can't compete.
- If you see someone being praised for effort, you can increase your effort.



Self-efficacy

Self-efficacy is a person's understanding of their own capabilities. Having high self-efficacy influences motivation.

- Our past experiences lead us to have expectations about our future performance.
- Repeated success raises your self-efficacy whereas failure lowers it.
- Other people can influence our self-efficacy. Parents and teachers might enhance your expectations verbally or through experiences they provide.
- Teachers should give students experience of success on tasks appropriate to their level.
- You are more likely to choose to do things you are good at and avoid those you aren't.
- Students who have high sense of self-efficacy are willing to make a greater effort and persist longer than those who doubt their capabilities.
- High self-efficacy leads to greater task persistence and more resilience if you fail because you believe you can succeed.

AO3 EVALUATION

It is inappropriate for us to say that **everyone** likes praise and being rewarded, some people don't like the attention.

Praise might actually reduce motivation, not increase it. If we reward people for a task, their motivation to complete is focussed on the reward rather than their own sense of achievement.

We can use our knowledge of self-efficacy to improve performance. On a test, you should attempt all the easiest areas first to give yourself a confidence boost.

EXAM PRACTICE #8

1) Describe the role of praise **and** self-efficacy in learning **[4 marks]**

2) Outline **two** criticisms of the role of praise and self-efficacy beliefs in learning **[4 marks]**

Verbaliser

A person who prefers to process information through words and sounds, i.e. listening to a teacher or reading.

HINT: Verbalisers are sometimes called auditory learners.

Visualiser

A person who prefers to process information through pictures, diagrams and colour, i.e. making posters.

Kinaesthetic learner

A person who prefers to process information through movement and practical work, i.e. carrying out a science experiment.

VERBALISER	VISUALISER	KINAESTHETIC LEARNER
Learn best with reading information and listening They remember information by repeating it over and over, focusing on the sound	Learn best with pictures and colours When they read a story, they picture the characters	Learn best by doing the activity themselves They prefer to carry out practicals rather than watching someone else do it

AO3 EVALUATION
Massa and Mayer (2006) found no evidence for the idea that different methods should be used for different learning styles, suggesting they are useless.
Some psychologists say that there is more than just 3 learning styles. In fact, there are potentially 7!
Not everyone fits into one learning style 100%. Some people are mixture of two learning styles, such as visual-verbal.
Knowing your learning style can help you improve your performance on tests.

EXAM PRACTICE #9

1) Distinguish between a visualiser and a verbaliser **[3 marks]**

2) The theory that people have different learning styles has been evaluated. Use your knowledge of psychology to evaluate learning styles. **[5 marks]**

LESSON #12 – WILLINGHAM'S LEARNING THEORY

PRAISE

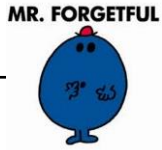
Research has shown us it is important to praise effort rather than performance. Willingham says praise should be unexpected for it to be effective. If we know we are going to be rewarded, it decreases our motivation.

If your performance depends on praise, it destroys your natural sense of motivation. You try hard for the praise, not to feel good.

MEMORY AND FORGETTING

There is evidence from research into memory that can help us learn in better ways.

1. We should learn an associated cue to help us remember a piece of information
2. We should practice retrieving information instead of trying to memorise information.



SELF-REGULATION

Self-regulation is being able to control your behaviour (i.e. your emotions, attention and other cognitive processes). Self-regulation has been tested with the marshmallow test (giving a child a marshmallow and telling them not to eat it for 15 minutes. If they succeed, they are given 2 marshmallows). Children who resisted (showed self-regulation) did better at school.

NEUROSCIENCE

Some learning disorders such as dyslexia have been associated with poor function in specific areas of the brain.

This might mean children could receive special help much earlier if their learning disorder is spotted earlier, benefitting their progress at school.

AO3 EVALUATION
Willingham's theory is based on research that is outdated. This means his theory could also be out-dated.
Willingham ignored the fact that individual differences mean people learn differently.
Willingham's theory focusses on improving student performance
Willingham's work can be applied to education and other situations to promote a child's development in a positive way.

EXAM PRACTICE #10

1) Willingham has criticised the theory of learning styles. Briefly explain his criticism. **[3 marks]**

2) Describe and evaluate Willingham's learning theory. **[9 marks]**

TOPIC 4 – RESEARCH METHODS

What do I need to know for the research methods topic?

Content	Additional information
Formulation of testable hypotheses	Null hypothesis and alternative hypothesis.
Types of variable	Independent variable, dependent variable, extraneous variables.
Sampling methods	Target populations, samples and sampling methods and how to select samples using these methods: • random • opportunity • systematic • stratified. Strengths and weaknesses of each sampling method. Understanding principles of sampling as applied to scientific data.
Designing research	Quantitative and qualitative methods: • the experimental method (experimental designs, independent groups, repeated measures, matched pairs, including strengths and weaknesses of each experimental design) • laboratory experiments • field and natural experiments • interviews • questionnaires • case studies • observation studies (including categories of behaviour and interobserver reliability). Strengths and weaknesses of each research method and types of research for which they are suitable.
Correlation	An understanding of association between two variables and the use of scatter diagrams to show possible correlational relationships. The strengths and weaknesses of correlations. Computation of formulae is not required.
Research procedures	The use of standardised procedures, instructions to participants, randomisation, allocation to conditions, counterbalancing and extraneous variables (including explaining the effect of extraneous variables and how to control for them).
Planning and conducting research	How research should be planned, taking into consideration the reliability and/or validity of: • sampling methods • experimental designs • quantitative and qualitative methods.
Ethical considerations	Students should demonstrate knowledge and understanding of: • ethical issues in psychological research as outlined in the British Psychological Society guidelines • ways of dealing with each of these issues.
Quantitative and qualitative data	The difference between quantitative and qualitative data.
Primary and secondary data	The difference between primary and secondary data.
Computation	Recognise and use expressions in decimal and standard form: use ratios, fractions and percentages, estimate results, find arithmetic means and use an appropriate number of significant figures.
Descriptive statistics	Understand and calculate mean, median, mode and range.
Interpretation and display of quantitative data	Construct and interpret frequency tables and diagrams, bar charts, histograms and scatter diagrams for correlation.
Normal distributions	The characteristics of normal distribution.

TOPIC 4 – RESEARCH METHODS

What do I need to know for the research methods topic?

#	Content			
1	Experimental Method: IV, DV and Hypotheses			
2	Extraneous Variables and How to Control Them			
3	Standardised Procedures			
4	Experimental Design AO1			
5	Experimental Design AO3			
6	Sampling AO1			
7	Sampling AO3			
8	Types of Experiments			
9	Ethical Considerations			
10	Questionnaires			
11	Interviews			
12	Case Studies			
13	Observations			
14	Correlations			
15	Types of Data			
16	Descriptive Statistics and Maths Skills			
17	Displaying Data - Graphs			

LESSON #1 – EXPERIMENTAL METHODS (IV, DV AND HYPOTHESES)

ALL THE YELLOW BOXES ARE KEY TERMS!

THE EXPERIMENTAL METHOD

Aim: General statement of what the researcher intends to investigate.

Aim

Independent Variable (IV): Variable that is manipulated by the researcher to look for an effect on another variable.

IV/DV

Dependent Variable (DV): Variable that is measured by the researcher to see if the IV had affected it.

Alternative Hypothesis

Null Hypothesis

Alternative Hypothesis: States that there is a relationship/difference between variables, which attempts to show the null hypothesis is not supported.

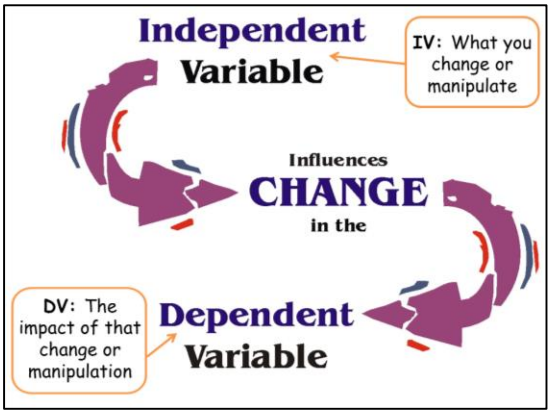
Directional: States the direction of the difference or relationship.
Non-Directional: Does not state the difference.

Null Hypothesis: A statement of no relationship/ difference between variables.

AN EXAMPLE…

"Participants do better on a test when tested in the same room where they were taught rather than tested in a different room"

IV = Context **DV** = Test performance
Alternative hypothesis = "There will be a difference in test scores between people who are tested in the same room than a different room"
Null hypothesis = "There will be no difference in test scores between people who are tested in the same room than a different room"



EXAM PRACTICE #1

1) Distinguish between a null and an alternative hypothesis **[3 marks]**

2) What is an 'independent variable'? **[1 mark]**

3) What is a 'dependent variable'? **[1 mark]**

LESSON #2 – EXTRANEOUS VARIABLES AND HOW TO CONTROL THEM

EXTRANEOUS VARIABLES
A variable, other than the IV, that might impact the results.

AN EXAMPLE
I want to research whether caffeine impacts memory…
IV = caffeine
DV = memory
EXTRANEOUS VARIABLES = personality, time of day, temperature of room, mood…

TYPES OF EXTRANEOUS VARIABLES…

ORDER EFFECTS

An extraneous variable that arises from the order in which conditions are presented. For example, becoming bored or tired. This is prevented using counter-balancing. Half of the PPTs complete condition A then B and the other half complete condition B then A.

SITUATIONAL VARIABLES

Features of the experimental situation that could affect the IV e.g. temperature, time of day, noise, etc.

PARTICIPANT VARIABLES

The differences between the people who take part in the study e.g. age, personality, etc. this is prevented by putting PPTs into groups using random methods.

DEMAND CHARACTERISTICS

When participants work out the aim of the study and change their behaviour accordingly. Participants might over-perform to please the researcher or might deliberately under-perform to sabotage the results.

INVESTIGATOR EFFECTS (RESEARCHER BIAS)

An unwanted influence of the investigator on the research outcome. This might be an unconscious thing in which the investigator influences the results of the study unintentionally. For example, they might smile each time someone gets an answer correct.

S&C: CONFOUNDING VARIABLES
A variable which might impact the results because it provides an alternative explanation. It must vary systematically with the IV (in other words, it must change in the same way that the IV does).

EXAM PRACTICE #2
1) Explain what is meant by an extraneous variable and give an example **[3 marks]**

2) What is meant by demand characteristics? **[2 marks]**

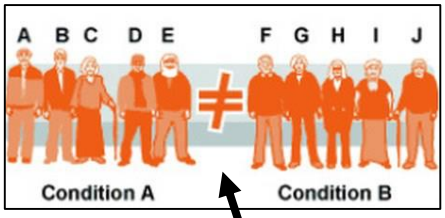
LESSON #3 – STANDARDISED PROCEDURES

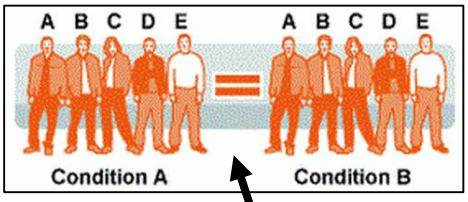
STANDARDISED PROCEDURES
A set order of carrying out a study that is applied to all participants when necessary.

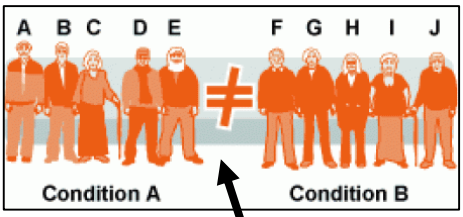
INSTRUCTIONS
The written (or verbal) information given to participants during the experiment.

LESSON #4 – EXPERIMENTAL DESIGN AO1
LESSON #5 – EXPERIMENTAL DESIGN AO3

EXPERIMENTAL DESIGN
The different ways in which participants can be organised in relation to the conditions of an experiment. There are three types of experimental design.







	INDEPENDENT GROUPS	REPEATED MEASURES	MATCHED PAIRS
DESCRIPTION	Two separate groups of ppts experience two different conditions of the experiment.	One group of participants experience all of the conditions of the experiment.	Two separate groups of ppts experience two different conditions of the experiment but are matched on a particular certain characteristic before the experiment takes place.
EXAMPLE	**Two groups of participants.** One **group** of participants (group 1) drink the caffeine (experimental condition). One **group** of participants (group 2) won't drink caffeine (control condition).	**One group of participants.** During **test** 1, all participants will drink caffeine and then do a memory test (experimental condition). During **test** 2, all participants will simply do the memory test (control condition).	Before the research, memory scores will be tested. PPTs will then be matched to someone with a similar score. **Two groups of participants.** One **group** of participants (all the partner As) will drink caffeine (experimental condition). One **group** of participants (all the partner Bs) will not drink caffeine (control condition).
ADVANTAGES	There are no order effects (ppts becoming bored, tired or better at the task) as they only take part in one condition. There are no demand characteristics (changing behaviour to please the researcher) as they only take part in one condition.	There is no issue with participant variables (differences between groups) because everyone is in the same group. This design is more economical as each participant contributes more than one result.	There are no order effects (ppts becoming bored, tired or better at the task) or demand characteristics (changing behaviour to please the researcher) as they only take part in one condition. Participant variables are reduced as ppts are matched based on their characteristics.
DISADVANTAGES	Participants who occupy the different groups are not the same. If a researcher finds a difference between the groups, it might be because of the individual differences (i.e. age) rather than the IV (i.e. caffeine). This design is also less economical as each participant contributes just one result.	There are order effects (ppts becoming bored, tired or better) as they take part in more than one condition. There are demand characteristics (changing behaviour to please the researcher) as they are more likely to guess the aim as they do all conditions.	Although there is an attempt to reduce participant variables, PPTs can never be matched exactly. Matching ppts is also time-consuming and expensive as it requires the researcher to test people before the study, meaning this design is less economical.

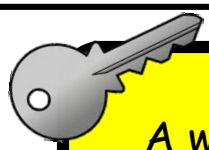
EXAM PRACTICE #3

1) Explain how a researcher investigating memory could used a matched pairs design. **[2 marks]**

2) What is an 'independent groups design'? **[2 mark]**

3) Evaluate the use of the repeated measures design **[6 marks]**

LESSON #6 – SAMPLING AO1
LESSON #7 – SAMPLING AO3



SAMPLING METHOD
A way for a researcher to narrow down the target population to use in their research.

SAMPLING METHOD	HOW TO DO IT…	STRENGTHS	WEAKNESSES
Random Every member of the target population has an equal chance of being selected	All names in target population given a number and then picked out of a hat.	Should be representative as everyone has an equal chance of selection and no researcher bias.	Takes time and effort as a list of everyone is the target population needs to be obtained.
Opportunity Produced by people who are willing and are available at the time to take part.	Researcher goes into the common room and picks people who happen to be there.	Every member of the target population has an equal chance of being selected.	Likely to be unrepresentative if drawn from one place and difficult to generalise.
Systematic Every nth member of the target population is selected for the sample.	List of names in target population and every 5th person is selected.	Avoids researcher bias as the researcher has no say who is selected and likely to be representative.	Although it is usually representative it can be biased e.g. the nth person may all be men.
Stratified Produced by selecting participants in proportion to their frequency in the target population.	100 males and females in target population (50:50). Sample of 20 means you would have 10 males and 10 females.	Most representative sampling method as sub-groups reflect the target population.	Very time-consuming and those selected may not always agree to take part.

EXAM PRACTICE #4

1) Describe what is meant by opportunity sampling **[2 marks]**

2) Evaluate the use of stratified sampling **[6 marks]**

3) What is a 'systematic sampling'? **[2 marks]**

LESSON #8 – TYPES OF EXPERIMENTS

	DESCRIPTION	STRENGTHS	WEAKNESSES
LAB	An experiment that takes place in a controlled environment where the researcher deliberately changes the IV to measure what effect it has on the DV.	Often use standardised procedures. Extraneous variables can be easily controlled which means that cause and effect is easier to establish.	Labs are not like everyday life and therefore lack ecological validity as participants behaviour may not reflect the real-world. Increased chance of demand characteristics.
FIELD	An experiment which takes place in a natural setting but the researcher deliberately changes the IV to measure the effect on the DV.	More realistic than lab settings because they are conducted in a natural environment. This means that field experiments have higher ecological validity.	Harder to control for extraneous variables because participants are in a natural setting. There may be ethical issues as participants may not know they are part of a study (lack of informed consent).
NATURAL	An experiment where the IV is not manipulated by the researcher but would have changed anyway. The effect on the DV is recorded.	Involve real-life changes so have high ecological validity. When the IV in naturally occurring (e.g. gender) this is the only type of experiment that can be used.	There is no random allocation of participants as the IV is naturally occurring. The natural event may rarely happen which makes it difficult to study.

EXAM PRACTICE #5

1) Distinguish between lab and field experiment **[3 marks]**

2) Evaluate the use of a natural experiment **[6 marks]**

LESSON #9 – ETHICAL CONSIDERATIONS

ETHICAL ISSUES	WAYS OF DEALING WITH THEM
INFORMED CONSENT Making participants aware of the aims, procedures and rights. Participants can then make an informed decision as to whether they want to take part.	Produce a letter for PPTs to sign - parental consent for under 16s. Retrospective consent if deceived.
DECEPTION Participants are not informed about the details of the study e.g. they are lied to or misled about the aims of the study.	Full DEBRIEF at the end of the study to inform them of anything they were not told about.
PROTECTION FROM HARM Participants should not be at more risk of suffering psychological/physical harm than in their everyday lives.	Psychologists to reassure that the participant's behaviour was 'normal' if they are anxious about it, could be offered counselling.
PRIVACY AND CONFIDENTIALITY Participant's right to control their information. Information should be protected and anonymised.	All participants should be anonymous and therefore referred to by their participant number.
RIGHT TO WITHDRAW Participants can leave the study and decide not to take part at any point (before, during or after).	Reminded during the debrief that participants have the right to with hold their data.

EXAM PRACTICE #6

1) Describe how a researcher could ensure privacy and confidentiality **[2 marks]**

2) Describe how a researcher could obtain informed consent **[2 marks]**

LESSON #10 – QUESTIONNAIRES

SELF-REPORT TECHNIQUES
Any method in which a person is asked to state or explain their own feelings, opinions, behaviours and/or experiences related to a given topic.

QUESTIONNAIRES
A set of written questions used to assess a person's thoughts and/or experiences.

Questionnaires produce both **qualitative** (data based on literacy) and **quantitative** (data based on numbers) data depending on what type of questions are asked.
Open questions ("Do you like school?") generate **qualitative** data whereas **closed** questions ("Do you like school? Yes/No") generate **quantitative** data.

AO3 EVALUATION
They are cost effective - they can gather large amounts of data quickly as they are distributed to large numbers of people.
A questionnaire can be completed without the researcher bring present (i.e. postal questionnaires) meaning effort is minimal.
Questionnaires can produce response bias which is where respondents reply in a similar way throughout (i.e. always ticking 'yes' or 'strongly agree'). This is known as acquiescence bias (yea-saying).
If the questions are unclear, the respondent isn't able to ask the researcher for clarification whereas in an interview they can.
The responses given might not always be truthful. Respondents might be keen to present themselves in a positive light. This is known as social desirability.

EXAM PRACTICE #6

1) Describe what is meant by a questionnaire **[2 marks]**

2) Evaluate the use of questionnaires **[4 marks]**

LESSON #11 – INTERVIEWS

	DEFINITION	STRENGTHS	WEAKNESSES
INTERVIEWS	A method in which a researcher collects data by asking questions directly.	Generally produces large amounts of data and provide information about people's thoughts and feelings that cannot be found out just by observing behaviour.	The interviewee may not tell the truth and give socially desirable answers. The researcher cannot be sure that the interviewee is telling the truth so data might not be accurate and lack internal validity.
STRUCTURED	All the questions are pre-set, given in a certain order and every person is asked the same questions.	Data from this type of interview can be collated and analysed easily and straight forward to replicate.	This type of interview lacks detail and may be frustrating for the interviewer who wants to ask another question and the interviewee who cannot explain the answer they have given.
UNSTRUCTURED	Only the first question is set and all other questions are determined by the answers of the interviewee.	There is much more flexibility which means the interviewer can follow up points as they arise and is much more likely to gain a better insight.	The data collected from this type of interview is hard to collate and analyse, some information might be irrelevant.

EXAM PRACTICE #7

1) Describe what is meant by a interview **[2 marks]**

2) Evaluate the use of interviews **[4 marks]**

LESSON #12 – CASE STUDIES

Case studies are in-depth investigations of a single person, group or community. Typically, data are gathered from a variety of sources and by using several different methods (e.g. observations & interviews The research may also continue for an extended period of time, so processes and developments can be studied as they happen.

CASE STUDY
An in-depth investigation of an individual, group or community.

EXAM PRACTICE #8

1) Explain what is meant by a case study **[2 marks]**

2) Evaluate the use of case studies **[4 marks]**

AO3 EVALUATION
They are able to offer rich, detailed insights that may shed light on very unusual forms of behaviour.
Case studies make use of various methods of data collection (observations, interviews, questionnaires, medical record).
Case studies make it difficult to generalise the findings as they are conducted on extremely small sample sizes (usually an individual or small group).
Using several methods to study just one individuals can be incredibly time-consuming. Case studies also take place over a long period of time.

LESSON #13 – OBSERVATIONS

NATURAL VS. CONTROLLED OBSERVATIONS

	DEFINITION	STRENGTHS	WEAKNESSES
NATURAL	Take place in the setting or context where the target behaviour would usually occurs. All aspects of the environment are free to vary.	High external validity as the findings can be generalised to everyday life as the behaviour is studied within the environment it would normally occur.	The lack of control over the research situation makes replication of the investigation difficult. There might be uncontrolled extraneous variables that make it difficult.
CONTROLLED	There is some control over variables as it takes place in an artificial lab setting.	Control over the research situation makes replication of the investigation easy making it smooth to assess reliability. Potential extraneous variables are less of a factor.	Low external validity as the findings can't be generalised to everyday life as the behaviour is studied outside of the normal environment. Participants might change their behaviour in the different setting meaning it isn't accurate to real life.

COVERT VS. OVERT OBSERVATIONS

	DEFINITION	STRENGTHS	WEAKNESSES
COVERT	Participants are unaware they are the focus of the study and their behaviour is observed in secret. The behaviour must be public anyway (i.e. in a park, not in someone's house!)	Observed behaviour is considered as natural as participants can't show demand characteristics.	Can be unethical as people might not want to have their behaviour noted down. For example, shopping is a public activity but people might feel uncomfortable if someone is writing down their trolley contents or cost.
OVERT	Participants are aware they are the focus of study. They know they are being observed and they have given informed consent beforehand.	Considerably more ethical than a covert observation because consent has been obtained from participants meaning they are likely to agree to data being used.	Participants know they are being watched so they might change their behaviour. For example, if their shopping trip was observed they might only put healthy items in their trolley over fear of judgement.

PARTICIPANT VS. NON-PARTICIPANTS OBSERVATIONS

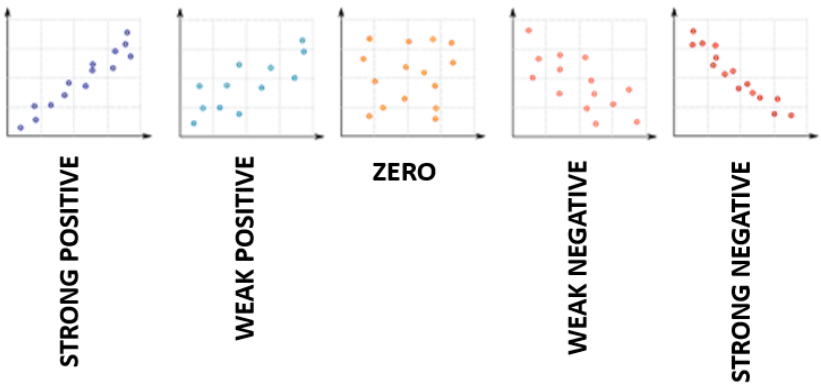
	DEFINITION	STRENGTHS	WEAKNESSES
PPT	The observer becomes part of the group they are studying in order to experience first-hand their thoughts and feelings.	The researcher experiences the situation as the participants do, giving them increased insight into the lives of the people being studied.	There is a possibility the researcher might identify too strongly with those being studied and lose objectivity, they might not see the situation free from bias as they are experiencing it.
NON-PPT	The observer remains separate from the group they are studying and record their behaviour. This might be because it's impossible to join groups they are studying (i.e. a female researcher can't join a men's football team).	Allows the researcher to maintain an objective distance from the participants so they don't become bias in a first-hand account.	There is no opportunity for valuable insight that can be gained in a participant observation as the researcher isn't immersed in the group.

EXAM PRACTICE #9

1) Distinguish between a natural and a controlled observation **[3 marks]**

2) Evaluate the use of participant observations **[4 marks]**

LESSON #14 – CORRELATIONS



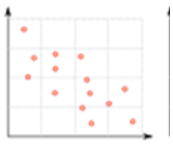
CORRELATION
A mathematical technique in which a researcher investigates an association between two variables (co-variables).

AO3 EVALUATION
Correlations can be used to direct future possible research as they provide a precise measure of how two variables are related.
They are relatively quick and economical to carry out as there is no need for a controlled environment or manipulation of variables.
Data collected by other people (secondary data) can be used, meaning correlations can be less time-consuming than experiments.
Correlations can only tell us how variables are related, not why. They cannot demonstrate a cause and effect, we don't know which co-variable is causing the other to change. For example, we can't conclude that drinking caffeine causes anxiety. It might be that anxious people have a tendency to drink caffeine.
There might be a third variable causing the relationship between the two co-variables, known as the third variable problem. For example, there is a link between stress and heart disease. However, it might be that this is because people smoke (3rd variable).
In order for a correlation to be informative there needs to be a large amount of data available for each variable so that a pattern can be seen.

EXAM PRACTICE #10

1) Explain what is meant by a correlation **[2 marks]**

2) Identify the correlation shown on the scatter graph **[2 marks]**



3) Evaluate the use of correlations **[6 marks]**

LESSON #15 – TYPES OF DATA

	DEFINITION	STRENGTHS	WEAKNESSES
QUALITATIVE	Data expressed in words, rather than numbers or statistics. It might take the form of a description of thoughts/feelings/opinions. It could even be a written account of an observation.	Data offers the researcher much more richness of detail than quantitative data, allows the PPT more freedom to develop their thoughts, feelings & opinions on a topic. Provides the researcher with a more meaningful insight into the participant's view of the world.	Qualitative data is often difficult to analyse as it can't be summarised statistically so patterns within data is hard to identify. Conclusions often rely on interpretations meaning they are subject to bias.
QUANTITATIVE	Data expressed numerically. These techniques usually gather numerical data in the form of scores from participants i.e. the number of words recalled. This can be converted into graphs, charts, etc.	Quantitative data is simple to analyse therefore comparisons between groups can be easily drawn. Data in numerical form tends to be more objective (based on facts) and less open to bias.	Quantitative data is much narrower in scope (i.e. it covers less) and has less meaning than qualitative data. It thus may fail to represent 'real-life'.
PRIMARY	Data that has been collected specifically for the purpose of the investigation by the researcher. It exists because the researcher collected it.	Primary data is data obtained for the purpose of an investigation meaning the data collection is designed in a way that specifically targets the information the researcher requires.	To produce primary data, the researcher must put in a lot of time and effort. Conducting an experiment requires considerable planning, preparation and resources.
SECONDARY	Data that has been collected by someone other than the person conducting the researcher. This could be from other journal articles, information from the government, etc.	Secondary data is inexpensive and easily accessed, requiring minimal effort. When examining secondary data, the researcher might find that the desired information already exists and so there is no need to collect data.	There might be variation in the quality and accuracy of secondary data. Information might at first appear to be valuable but upon investigation, it might be out-dated/incomplete.

EXAM PRACTICE #11

1) Describe what is meant by qualitative data **[2 marks]**

2) Evaluate the use of primary data **[4 marks]**

3) Evaluate the use of quantitative data **[4 marks]**

Data can be **BOTH** primary/secondary and qualitative/quantitative.

EXAMPLES:

- Looking at police recorded statistics = **quantitative** & **secondary**
- Reading Hitler's diary = **qualitative** & **secondary**
- Interviewing your participants = **qualitative** & **primary**
- Testing the memory of your participants = **quantitative** & **primary**

LESSON #16 – DESCRIPTIVE STATISTICS AND MATHS SKILLS
MEASURES OF CENTRAL TENDENCY

TYPE	DEFINITION	STRENGTHS	WEAKNESSES
MEAN	The average value which is calculated by adding all of the scores in a data set and then dividing by the total number of scores.	It uses all the scores in the data set and can be used in further calculations such as standard deviation.	It can be distorted by extremely high or low scores making it unrepresentative and therefore misleading.
MEDIAN	The middle score when the data is put in order.	It's relatively quick and easy to calculate and it not affected by extremely high or low scores. Therefore it can be used on 'skewed' sets of data to give a 'representative' average score.	Not all the scores are used to work it out and it has little further use in data analysis.
MODE	The score that occurs most often in a data set.	It shows the most common or 'important' score. Also, it always has a result from the actual data set so it can be more useful or realistic statistic.	It's not very useful as there can be several values and again, it has little further use in data analysis.

MEASURES OF DISPERSION

RANGE
A simple measure of the spread/dispersion in a set of data. The lowest score is subtracted from the highest score.

High SD = Data is spread from the mean, suggesting ppts responded in different ways.
Low SD = Data is close to the mean, suggesting ppts responded in a similar way.

STANDARD DEVIATION
A sophisticated measure of the spread/dispersion in a set of data. It tells us how much scores deviate from the mean.

EXAM PRACTICE #12

1) Evaluate the use of the media as a measure of central tendency **[3 marks]**

6, 5, 7, 2, 7, 8, 3

1) Using the data above, calculate the mean **[2 marks]**
2) Using the data above, calculate the median **[2 marks]**
3) Using the data above, calculate the mode **[2 marks]**

LESSON #16 – DESCRIPTIVE STATISTICS AND MATHS SKILLS

	MEANING	EXAMPLE
=	equal to	$4 = 3 + 1$
>	greater than	$3 > 2$
<	less than	$2 < 3$
>>	much greater than	$3000 >> 0.02$
<<	much less than	$0.02 << 3000$
$\propto$	proportional to	$f(x) \propto g(x)$
$\approx$	approx. equal	$11 \approx 10$

CALCULATING PERCENTAGES

'Percent' means 'out of 100'. If 90 per cent of the population owns a mobile phone, this means 90 out of every 100 people have one.

RATIOS

A part-to-part ratio is when we compare two distinct groups, i.e. the ratio of males to females could be 4:5. This means for every 9 people, 4 would be male and 5 would be female.

PERCENTAGES TO DECIMALS

Remove the % sign and move the decimal point two places to the left.

DECIMALS TO FRACTIONS

Work out how many decimal places (number of digits after the decimal point) are in the number.
For example, 0.81 has two and 0.275 has three.
If there are two decimal places then you divide by 100.
If there are three decimal places then you divide by 1000.

EXAM PRACTICE #13

1) Describe what is meant by '<' in mathematics **[2 marks]**

2) Show 53/100 as a decimal **[1 mark]**

3) Convert 42% into a decimal **[1 mark]**

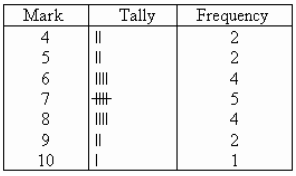
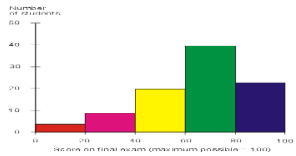
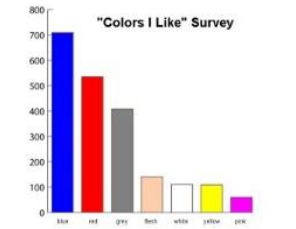
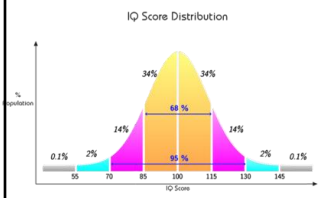
4) Write the ratio of males to females in a piece of research that used 30 females and 70 males **[2 marks]**

5) Calculate 42/73 as a percentage **[2 marks]**

6) Covert 0.56 into a fraction **[1 mark]**

7) Convert 1.42 into a fraction **[1 mark]**

LESSON #17 – DISPLAYING DATA - GRAPHS

	DEFINITION	KEY CHARACTERISTICS	WHEN WOULD IT BE USED?	SKETCH IT!
Frequency table	A table is a systematic way of representing data so it is organised into rows and columns.	Uses tallies/numbers to show a record of how often an event occurs.	When data can be grouped/categorised e.g. height, scores on a test, etc.	
Histogram	A type of graph where the frequency of each category of continuous data is represented by the height of the bar.	Data has a true zero, there is a logical sequence and there are no gaps between bars.	When data is a continuous measurement e.g. height or scores on a test, etc.	
Bar chart	A type of graph that is used to display data from different categories.	Each bar represents a separate category, there is no true zero and bars must not touch one another.	When data is in categories e.g. asking people what their favourite colour is, etc.	
Normal distribution curve	A symmetrical spread of frequency data that forms a bell-shaped pattern.	The mean, median and mode are all located at the same point - the highest peak. The two 'tails' are always equal.	When data can be measured in human behaviour e.g. shoe size, IQ, etc.	
Scatter diagram	A type of graph that represents the strength and direction of a relationship between two co-variables.	One co-variable is measured on the x-axis, the other on the y-axis. We are able to see if there is a relationship.	When data is correlational, and when we are looking for an association between two variable, not a difference e.g. ice-cream sales and temperature.	

Mark	Tally	Frequency
4	II	2
5	II	2
6	IIII	4
7	𝍸	5
8	IIII	4
9	II	2
10	I	1

EXAM PRACTICE #14

1) Describe what is meant by a bar chart **[2 marks]**

2) Explain when a frequency table would be used **[2 marks]**

KEYWORD	DEFINITION
HYPOTHESIS	
VARIABLE	
INDEPENDENT VARIABLE (IV)	
DEPENDENT VARIABLE (DV)	
EXPERIMENT	
CONDITION	
PARTICIPANT	
ORDER EFFECTS	
PARTICIPANT VARIABLES	
STANDARDISED PROCEDURES	
RANDOM ALLOCATION	
COUNTERBALANCING	
EXTRANEOUS VARIABLE (EV)	
CONTROL	

KEYWORD	DEFINITION
INSTRUCTIONS	
RANDOMISATION	
ECOLOGICAL VALIDITY	
OBJECTIVITY	
SAMPLE	
TARGET POPULATION	
REPRESENTATIVE	
GENERALISED	
RANDOM SAMPLE	
OPPORTUNITY SAMPLE	
SYSTEMATIC SAMPLE	
STRATIFIED SAMPLE	
RAW DATA	

KEYWORD	DEFINITION
MEAN	
MODE	
MEDIAN	
RANGE	
ANOMALOUS RESULT	
PERCENTAGE	
ETHICAL ISSUES	
INFORMED CONSENT	
PROTECTION FROM HARM	
DEBRIEF	
RIGHT TO WITHDRAW	
PRIVACY AND CONFIDENTIALITY	
BRITISH PSYCHOLOGICAL SURVEY (BPS)	

KEYWORD	DEFINITION
QUESTIONNAIRE	
SURVEY	
CLOSED QUESTION	
OPEN QUESTION	
UNAMBIGUOUS	
INTERVIEW	
INTERVIEWEE	
STRUCTURED INTERVIEW	
UNSTRUCTURED INTERVIEW	
NATURAL OBSERVATION	
OBSERVATION STUDY	
CATEGORIES OF BEHAVIOUR	
INTER-OBSERVER RELIABILITY	

KEYWORD	DEFINITION
CASE STUDY	
RELATIONSHIP	
VARIABLE	
CORRELATION	
SCATTER GRAPH	
POSITIVE CORRELATION	
NEGATIVE CORRELATION	
NO CORRELATION	
PREDICTION	
CASE STUDY	