Marietta City Schools

2024–2025 District Unit Planner

Individuals and Societies IB Psychology Yr 1

Unit Title/ Topic	*Unit 3: Cognitive Psychology*	**Hours**	*30 Hours*

Mastering Content and Skills through INQUIRY (Establishing the purpose of the Unit): ***What will students learn?***

Students will explain how principles that define the cognitive level of analysis may be demonstrated in research through theories and/or studies. Students will outline principles that define cognitive levels of analysis, such as: mental representations that guide behavior and mental processes that can be scientifically investigated. Students will discuss how and why particular research methods are used at the cognitive level of analysis, such as experiments. Additionally, students will be able to learn to what extent are our memories reliable? To what extent can we multitask? How does our brain organize data? How do cultural, environmental, and biological factors influence our memory?

Unit Description and texts

The cognitive unit focuses on two different cognitive processes. The first part of the unit focuses on memory, including the question of the reliability of memory and the role of emotion on eyewitness testimony. The second part of the unit focuses on thinking and decision-making. STudents will also learn the effects technology has on our cognitive processes and emotion and cognition.

Transfer goals/Skills	**Approaches to learning (ATL)**
Skills: Students' thinking Research Communication Social Self-management *(Keep 1-3 used during the unit. Aim for a variety to help facilitate learning. Delete those not used and this statement)* **Details:** Apply and evaluate a reductionist approach to understanding behavior.	**Category:** Thinking **Cluster:** Critical thinking: Analyzing and evaluating issues and ideas **Skill Indicator:** This unit presents a lot of metacognitive opportunities for students to reflect on their own learning by linking theories and research to their own educational experiences. **Category:** Communication **Cluster:** Working effectively with others **Skill Indicator:** Students will communicate through leading and presentations to peers as they discuss and evaluate key studies throughout this unit. **Category:** Research **Cluster:** Exchanging thoughts, messages and information effectively through interaction **Skill Indicator:** Students will continue to learn how to search for research in order to prepare for the writing of their internal assessments. In addition, students will use technology to design infographics which may become a way that some students feel is more appropriate for developing a study guide for the unit

Consider ethical concerns about the way in which psychological research is carried out and applied. Recognize how one's own thinking and perception may affect one's behavior.	**Details:**
Content/skills/concepts	**Learning process**
<u>Students will know the following content:</u> What makes the cognitive approach distinctly different from other approaches? Different research methods used by psychologists to study cognitive processes. What is Schema theory - research supporting it, application of the theory and its limitations. Different models and theories of memory: The Multi-Store Model, Levels of Processing Theory, The Working Memory Model, Schema Theory The role of institutionalization, abuse and schooling on memory The reconstructive nature of memory. The role of emotion in memory (flashbulb memory) One model of decision making (Dual Processing Model) Cognitive biases in decision making The effect of technology on cognitive processes (HL only). **<u>Students will develop the following skills:</u>** Propose a research design and procedure to test a hypothesis. Develop an argument using appropriate evidence. Evaluate the strengths and limitations of theories and research. Apply psychological theory to solve a problem. **<u>Students will grasp the following concepts:</u>** Different cognitive processes and the reliability of cognitive processes Cultural factors that affect cognition The effects of emotion and technology on cognition Key terms: Memory, Models, Cognitive misers, Reliability, flashbulb memory, bias in thinking and decision making	Small group/pair work: In class experimental demonstrations of chunking, serial position effect, levels of processing, schema theory and working memory. (notes + small group and/or pair activities) PowerPoint lecture/notes: Interactive lecture and video presentations. (notes) Individual and Group presentations: PowerPoint presentations (individual and group) Student lecture/leading: Case study approaches (student leading + pair work) **Others:** *Podcast from bbc - case study* *Virtual reality activity - ptsd (in the works)* *Working memory online games*

Language and Learning	TOK Connections	CAS connections
Activating background knowledge Scaffolding for new learning Acquisition of new learning through practice **Details:** Students will have a lot of "clarification" in their writing to help students operationalize variables and unpack their evaluation of research, providing students with language frames that they can use to improve these skills. Key evaluation terminology will be available during the assessments to trigger memory and encourage a broader range of evaluative strategies.	Personal and shared knowledge Areas of knowledge The knowledge framework **Details:** We will look in depth at the question of the reliability of memory. The theory of reconstructive memory as well as how this affects what we know and who we are is a large part of the unit. We also spend a lot of time on schema theory in which we learn about how cognitive filters often determine our behavior based on past experience. Another important area of study is cognitive biases. This is well linked to the question of how rational/logical we are. Decision-making models examine the rational approach to decisions vs the intuitive approach to decisions - both ways of knowing. Lastly, we look at the question of how we study something that we cannot see. This was Skinner's great criticism of cognitive research - that we are trying to study the "Black Box." We look at the extent to which we can really know what is happening in the brain as well as the limitations of the methods used by psychologists.	Creativity Activity Service **Details:** The HL focus on technology invites students to consider how they could improve the way our community lives and works with technology. The knowledge and understanding gained in this unit with regard to memory and how we learn should serve as good "professional development" for any community involvement; whether as tutors, active community members, or clubs and the ways in which students create activities from their knowledge and understanding.

Essential Understandings and Questions

Factual:
What are the levels of processing according to Craik and Lockhart?
What is the working memory model?
What is cognitive schema?
What are the functions of schema theory?
What is the difference between system one and system two processing in decision making?
What is flashbulb memory?
What studies use true experiments in the cognitive approach?
What are some positive and negative effects technology has on our working memory?
What effects does technology have on emotion and cognition?
What are some ethical considerations that need to be addressed in the cognitive approach to human behavior?

Conceptual:
Explain how one study supports the working memory model?
How does one memory model relate to memory formation?
How does our mind use cognitive schemas to make sense of the world?
What is one model or theory of thinking and decision making?
How does the misinformation effect demonstrate the reconstructive nature of memory?
How can one or more biases in thinking and decision making be demonstrated in studies?
How can emotion affect cognition?

How and why are true experiments used in the cognitive approach?
How can technology have a positive effect on working memory?
How can technology have a negative effect on working memory?
How can technology have a positive and negative effect on emotion and cognition?
How and why are true experiments used to study the effects of technology on cognition?
How are ethical considerations met in the cognitive approach?

Debatable:
Discuss models of memory.
Discuss one or more studies related to schema theory.
Discuss the reliability of one cognitive process.
Discuss one theory of thinking and decision making.
Discuss one or more biases in thinking and decision making.
To what extent does emotion affect cognition?
Discuss the use of one or more research methods used in the cognitive approach to understanding human behavior
Discuss the positive and negative effects of modern technology on one or more cognitive processes.
To what extent does technology have a positive effect on cognitive processes
Discuss the use of one method used to study the influence of technology on the reliability of cognitive processes.
Discuss one or more ethical considerations related to research in the cognitive approach to understanding human behavior.

Common Assessment Tasks
List of formative and summative assessments.

DP Assessments	**Assessment Objectives**	**Formative Assessments**	Writing quiz on memory and cognition Writing quiz on decision making and dual processing Presentations of student created infographic for key studies Critical thinking tasks/assignments to evaluate and compare studies (individually and in a small group setting) study guides on cognitive processes and reliability of cognitive processes	**Summative Assessments**	Writing assignment: Essay response question related to any of the following topics: cognitive processes reliability of cognitive process effect of emotion and memory effects of technology on cognition

Learning Experiences

Add additional rows below as needed.		
Topic or Content	**Learning Experiences**	**Personalized Learning and Differentiation** All information included by PLC in the differentiation box is the responsibility and ownership of the local school to review and approve per Board Policy IKB
Cognitive Processes	I. Levels of Processing activity A. handout A B. handout B C. teacher script 1. Students will learn that what we encode is affected by its context and that semantic level of processing provides a deeper level of encoding when learning new material.	Students will build on their understanding of how biological and psychological factors interact to determine our behavior as we examine the role of memory through cognitive processes. (scaffold learning) Students will continue to develop their critical thinking skills with regard to the strengths and limitations of different approaches to research. (prior knowledge)
Reliability of Cognitive Processes	II. Activity: War of the Ghosts reading A. Three students will volunteer. The teacher will read the story to the first student. Then the first student will repeat what they remember from the story to the second student. The second student will also repeat what they remember to the last student. 1. This is to help students understand that our memory is unreliable and that rationalization is the process of changing or omitting details that are consistent with existing schema.	Students will build on their understanding of how biological and psychological factors interact to determine our behavior as we examine the role of memory through cognitive processes. (scaffold learning) Students will continue to develop their critical thinking skills with regard to the strengths and limitations of different approaches to research. (prior knowledge)
Emotion and Cognition	III. Jigsaw activity grid sheet IV. Jigsaw group instructions A. Step 1: Divided into groups of 6 B. Step 2: Each group has been assigned a leader C. Step 3: The lesson has been broken up into the above segments / pieces of the jigsaw D. Step 4: Each person in the group will chose a segment / piece of the jigsaw E. Step 5: You will form temporary “expert groups” by all the A pieces joining together, all the B pieces joining together, all the C pieces etc. In your expert group you will have 15 minutes to discuss the main points of your segment and rehearse the presentations that you will make to your original group - – write down notes to help you remember.	Students will build on their understanding of how biological and psychological factors interact to determine our behavior as we examine the role of memory through cognitive processes. (scaffold learning) Students will continue to develop their critical thinking skills with regard to the strengths and limitations of different approaches to research. (prior knowledge)

	F. Step 6: Go back into your original jigsaw group. In alphabetical order (of jigsaw pieces) present your segment or piece to your classmates. Remember they are counting on you to be the "expert" of that portion. 1. Students will be able to analyze the different aspects of flashbulb memory and how cultural differences play a role in cognition.	

Content Resources

InThinking website
Themantic Education

V. Cognitive Processes: Outline
- A. Introduction
  1. Memory Introduction game
  2. Memory Intro and Encoding PPT
  3. Levels of Processing activity
     a) handout A
     b) handout B
     c) teacher script
  4. TedTalk: Feats of Memory anyone can do
- B. Memory models
  1. (Topic summary chart)
     a) Multi Store Model PPT
        (1) HM case study video
        (2) podcast of HM from BBC
        (3) Serial Positioning Effect activity
        (4) MSM review
     b) WMM PPT
        (1) WMM reading
        (2) Evidence for WMM review sheet
        (3) dual task technique activity A
        (4) dual task technique activity B
        (5) multi-task sheet 1
        (6) multi-task sheet 2
        (7) word length effect activity
        (8) Landry and Bartling study
        (9) videos:
            (a) Alan Baddley on the development of WMM
            (b) Can you multitask?

c) PPT: Schema Theory Introduction and Schematic Processing
d) PPT: Schema Theory: Confirmation Bias & Information Processing and Comprehension
(1) The Story – Sarah the Librarian's Birthday
(2) The Story – Sarah the Waitress's Birthday
(3) Replication Study - Laundry #1
(a) Participant Data - sheet 1
(b) Participant Data - sheet 2
(c) Participant Data - sheet 3
(4) Reading: Schema Theory Introduction and Schematic Processing
(5) Reading: Confirmation Bias and Information Processing and Comprehension
(6) airlines flash news activity
(7) Bartlett study

C. Decision making
1. Decision-making Introduction PPT
a) videos:
(1) Frontal Lobe - Human Brain Series - Part 5
(2) Lessons of the brain: the Phineas Gage case
(3) The Marshmallow Test | Igniter Media
b) activities:
(1) group-decision making: baseball brain teaser
2. Dual Processing model and PFC PPT
a) BBC documentary video with questions on slide 7
b) Daniel Kahneman: Thinking Fast vs. Thinking Slow video
c) video: 2-Minute Neuroscience: Prefrontal Cortex
d) video: The Science of Thinking
e) Reading: A dual processing model of decision making
f) Reading: The Prefrontal Cortex and Aggression
g) Key Study: Judgment Under Uncertainty (Tversky and Kahneman, 1974)
3. Dual Process Model of thinking and decision making reading (InThinking material)
4. Thinking and decision making PPT (InThinking material)
5. Dual Processing Model PPT (InThinking material)
6. Wason Task Study

VI. Reliability of Cognitive Processes
A. Reconstructive memory
1. Activity: War of the Ghosts reading
2. Reconstructive Memory PPT - Part 1: Rationalization and Leading Questions
3. Rationalization and Leading questions reading
4. Reconstructive Memory PPT - Part 2: The Misinformation Effect and False memories
5. The Misinformation effect and false memories reading

6. Loftus and Pickrell study 1995
7. Loftus and Palmer study 1974
8. Bahrick et al study 1975

VII. Emotion and Cognition
- A. PPT: The Role of Emotion on Memory (cognition): Flashbulb memories
  1. Jigsaw group instructions
  2. Jigsaw activity grid sheet
  3. Remembering 9/11 homework activity
  4. Brown and Kulik study 1977
  5. Sharot et al study 2007
  6. McGaugh & Cahill study 1995
  7. Neisser and Harsch study 1992
  8. Kulkofsky et al study 2011

VIII. Cognitive Biases in Dec
- A. Cognitive Bias in Thinking PPT
  1. Stone et al 2010 study
  2. Cohen 1981 (stereotypes and confirmation bias)

IX. HL Extension: Technology and cognitive processes
- A. Working memory games - intro
- B. HL EXT Technology and Cognition - Positive effects PPT
  1. Virtual Reality and Fear Extinction Guided Reading
  2. videos: (these go with the PPT above - I may end up using the Jigsaw activity below this year though, until I can develop this topic better with ThemanticEd.)
     a) Improving working memory capacity Tedtalk
     b) VRET and PTSD
     c) Nightmares Versus Flashbacks
     d) Virtual reality battles PTSD
     e) TED Talk by Bailey Parnell: Is Social Media hurting your mental health
        (1) TedTalk guiding questions
  3. Jigsaw Activity for HL Extension - Cognitive processing in the digital world