The Ultimate AP® Psychology Unit 2 Cheat Sheet

2.1 Perception: Processing & Attention

Two Directions of Processing

Bottom-up: starts w/ raw sensory input → brain builds it into a whole (data-driven, feature by feature).
Top-down: knowledge, expectations & experience guide how input is read (concept-driven, fills gaps).
Example: reading messy handwriting → context fills in the unclear letters (top-down processing).

What Shapes Top-Down

Schema: mental framework that organizes & predicts info (e.g., "restaurant" script: order, eat, pay).
Perceptual set: readiness to see what we expect → same ambiguous image read differently by different people.
Context, culture & emotion: alter what we notice & how we read it (scared → shadow seen as a person).

Influence	Example
Expectation	See a face in clouds
Context	B/13 read by row/column
Culture	Different depth cue use
Motivation	Hungry → notice food

Attention

Selective attention: focus on a small part of all input at once.
Cocktail party effect: own name pops out of background noise you weren't consciously tracking.
Inattentional blindness: miss a fully visible object b/c attention is elsewhere (gorilla among ball passers).
Change blindness: miss a change in a scene (e.g., person swapped mid-conversation goes unnoticed).
Multitasking: really just fast task switching → slower, more errors (e.g., texting while driving is very dangerous).

⚠ Inattentional blindness = missing something new in view; change blindness = missing a change to it.

✓ Scenario Qs: ask "did prior knowledge or expectation shape it?" → yes = top-down; no = bottom-up.

2.1 Perception: Organization, Depth & Constancy

Gestalt Principles

Gestalt: whole > sum of parts; brain automatically groups scattered input into meaningful, organized patterns.

Principle	We group by…
Figure-ground	Object vs. background
Proximity	Nearness
Similarity	Shared color, shape
Closure	Filling in gaps
Continuity	Smooth, unbroken lines

Depth Cues

Binocular (2 eyes): **retinal disparity** (images differ more when close), **convergence** (eyes turn in).
Monocular (1 eye, used by artists): **relative size**, **interposition** (overlap), **relative height**, **linear perspective**.
More monocular: **texture gradient** (finer = farther), **relative clarity** (hazy = farther), **light & shadow**.
Visual cliff (Gibson & Walk): crawling infants avoid the "drop" → depth perception is present early in life.

Constancy & Motion

Perceptual constancy: see objects as stable despite changing retinal images, distance, viewing angle, or lighting.
Size: car looks same size far away. **Shape**: open door still seen as rectangle. **Color/brightness**: stable in new light.
Apparent motion: brain sees motion that isn't there.
Phi phenomenon: lights blink in sequence → seem to move.
Stroboscopic: still frames → film motion.
Illusions: Müller-Lyer, Ponzo → depth cues misapplied to flat drawings; lines look unequal but aren't.
Perceptual adaptation: adjust to altered vision (e.g., upside-down or shifting goggles) w/ practice over days.

⚠ Linear perspective = parallel lines meet in distance; texture gradient = detail fades w/ distance.

✓ Name the cue AND explain how it signals distance.

2.2 Thinking, Problem-Solving & Decisions

Building Blocks

Concept: mental grouping of similar things or ideas.
Prototype: the best, most typical example (a robin for "bird").
Assimilation: fit new info into an existing schema.
Accommodation: change the schema to fit new info.
Executive functions: plan, focus, switch tasks, control impulses (prefrontal cortex, frontal lobes).

Problem-Solving

Algorithm: step-by-step method → slow but guaranteed.
Heuristic: mental shortcut → fast, error-prone.
Mental set: stick w/ a method that worked before, even when a better or simpler one exists (fixation).
Functional fixedness: see objects only in their usual use (can't think to use a coin as a screwdriver).
Creativity: **divergent** thinking (many possible answers) vs. **convergent** thinking (the one best answer).

Biases & Errors

Error	What happens
Representativeness	Judge by prototype fit
Availability	Judge by ease of recall
Confirmation bias	Seek only agreeing info
Framing	Wording alters choice
Gambler's fallacy	Past odds alter future
Sunk-cost fallacy	Keep going b/c invested

Belief perseverance: keep a belief after evidence against it.
Overconfidence: overrate own accuracy.
Priming: earlier exposure to a word or image shifts later thoughts, perceptions, or choices w/o awareness (implicit).

⚠ Availability = how easily examples come to mind (plane crashes on news). Representativeness = fits a stereotype.

✓ FRQ: define the term, then apply it to THIS specific scenario. A definition alone rarely scores a point.

2.3 Memory Systems & Models

Types of Memory

Type	Also called	Example
Explicit	Declarative	Facts, events
– Episodic	Personal events	Last birthday
– Semantic	General facts	Capital of Peru
Implicit	Nondeclarative	Skills, habits
– Procedural	Motor skills	Riding a bike

Implicit also covers classically conditioned responses & priming effects (shown in behavior, not stated).
Prospective memory: remembering to do something in the future (take meds at 8 p.m., call back a friend).

Models

Multi-store model (Atkinson-Shiffrin): sensory → short-term → long-term memory, in stages; info can be lost at each.
Working memory (Baddeley): active STM workspace w/ a **central executive** (directs attention, juggles tasks).
Its parts: **phonological loop** (sounds, words), **visuospatial sketchpad** (images), **episodic buffer**.
Levels of processing: shallow (structure, sound) → deep (meaning) → deeper = better later recall.

Brain & Memory

Hippocampus: forms new explicit memories. **Cerebellum** & basal ganglia: implicit & procedural skills.
Amygdala: emotion boosts memory (vivid flashbulb memories). **Frontal lobes**: working memory + retrieval.
Long-term potentiation (LTP): repeated firing strengthens synapses → biological basis of learning.

⚠ Damaged hippocampus → can't form new facts, but can still learn new motor skills (patient H.M.).

✓ Sort by "can you put it into words?" → yes = explicit; if shown only by doing or reacting = implicit.

2.4–2.5 Encoding & Storing Memories

Encoding (2.4)

Automatic processing: no effort (where you sat, how often).
Effortful: needs attention & practice to stick.
Chunking: group items into units (phone # as 3-3-4).
Hierarchies: organize info by category, then subtopic.
Mnemonics: memory aids (acronyms, rhymes). **Method of loci**: link items to places on a familiar route.
Self-reference effect: info tied to yourself is better remembered (deep, meaningful processing).
Spacing effect: **distributed practice** beats **massed practice** (cramming) for long-term recall and retention.
Serial position effect: recall best for first (**primacy**) & last (**recency**) items in a list; middle items fade.

Storage (2.5)

Store	Capacity	Duration
Sensory: iconic	Large	< 1 sec
Sensory: echoic	Large	3–4 sec
Short-term	~7 ± 2 items	~20–30 sec
Long-term	Near limitless	Years, life

Maintenance rehearsal: repeat to keep in STM. **Elaborative rehearsal**: link to meaning → stored in LTM.
Consolidation: memories stabilize into long-term storage over time, esp. during sleep (hippocampus → cortex).
Autobiographical memory: your life story (episodic + semantic). Few memories before age ~3.
Sperling: partial-report study → iconic memory briefly holds nearly a whole display, fades in under 1 sec.

⚠ Recency effect fades on a delayed test; primacy lasts (early items got more rehearsal → stored in LTM).

✓ Study tip Qs: spacing + elaboration + self-reference + testing = the strongest, most-supported answers.

2.6 Retrieving Memories

Measures of Retrieval

Recall: pull info out w/ few cues (fill-in-the-blank, essay).
Recognition: identify info from options (multiple choice) → easier than recall b/c the answer is a cue.
Relearning: learn faster the 2nd time → the **savings** show memory remained (Ebbinghaus, 1885).

Retrieval Cues

Retrieval cue: anything that helps access a memory (a smell, place, song, or word linked at encoding).

Effect	Recall is best when…
Context-dependent	Same place as learning
State-dependent	Same internal state
Mood-congruent	Mood matches memory
Encoding specificity	Cues match encoding

Example: divers learn words underwater → recall better underwater than on land (context-dependent).
Mood-congruent: sad mood → recall more sad memories → can keep a depressed mood going (a vicious cycle).

Strengthen Retrieval

Testing effect: retrieval practice (quizzing, flashcards) beats rereading or highlighting for long-term memory.
Metacognition: thinking about your own thinking → judge what you really know vs. just recognize.
Elaboration: more links to a memory = more paths back to it.
Tip-of-the-tongue: know you know it, can't retrieve it yet → retrieval failure, not storage loss (cues help).
Example: study while calm, take the test while calm too → a state-dependent edge on later recall.

⚠ State-dependent = internal state (mood, drug, alcohol). Context-dependent = outside setting (room, place).

✓ AAQ: if a study measures memory by free recall vs. recognition, that choice is the DV's operational definition.

2.7 Forgetting & Memory Challenges

Why We Forget

Forgetting curve (Ebbinghaus): fast loss at first, then levels off (tested w/ nonsense syllables on himself).
Encoding failure: info never entered LTM (can't draw a penny's details despite seeing thousands).
Storage decay: memory traces fade over time.

Interference	Direction	Example
Proactive	Old blocks new	Old locker code
Retroactive	New blocks old	New # erases old

Amnesia & Disease

Anterograde amnesia: can't form NEW memories after injury.
Retrograde: lose OLD memories from before.
Infantile amnesia: few memories before age ~3 (hippocampus, language still developing).
Alzheimer's disease: loss of neurons + ACh → growing memory loss, starting w/ the most recent memories.

Memory Construction Errors

Misinformation effect (Loftus): misleading info after an event distorts memory ("smashed" vs. "hit").
Source amnesia: remember the info, forget where it first came from (the news vs. a friend vs. a dream).
Imagination inflation: repeatedly picturing an event raises confidence it really happened (false memory risk).
Constructive memory: we rebuild memories each time we recall them → feeling confident ≠ being accurate.
Repression: Freud's idea that painful memories get blocked from awareness; little research support today.
Loftus & Palmer: "smashed" wording → higher speed estimates, more false recall of broken glass a week later.
Leading questions: suggestive wording plants details; neutral, open-ended questions protect the original memory.

⚠ PRO = old blocks new; RETRO = new blocks old. Ask which memory came first, then match the direction to it.

⚠ Eyewitness confidence does not prove accuracy.

2.8 Intelligence & Achievement

Theories

General intelligence (g) (Spearman): one ability underlies scores on different tests (factor analysis).
Fluid intelligence: reason fast, solve new problems (↓ w/ age). **Crystallized**: knowledge (↑ w/ age).
Multiple intelligences (Gardner): separate abilities (musical, spatial, interpersonal); little test-based support.

Testing

Binet: mental age. **IQ** (Terman, Stanford-Binet) = mental age ÷ chronological age × 100 (used for kids).
Wechsler (WAIS): most-used IQ test; mean 100, SD 15 → ~68% of people score 85–115 (within 1 SD).
Aptitude test predicts future ability (SAT). **Achievement** test measures what you learned (AP exam).

Term	Meaning
Standardization	Uniform rules, norm group
Reliability	Consistent results
Validity	Measures what it claims
Predictive validity	Predicts later outcome

Influences & Issues

Flynn effect: avg. IQ scores rose over the 20th century → environment (nutrition, schooling) matters.
Stereotype threat: worry about confirming a group stereotype lowers test performance (Steele, Aronson).
Growth mindset (Dweck): belief that ability can improve → more effort, better results over time vs. fixed mindset.
Cultural bias: items that assume one culture's knowledge; early 1900s **eugenics** movement misused IQ tests.

⚠ A test can be reliable but not valid (a bathroom scale that always reads 5 lb heavy). Validity requires reliability first.

✓ Explain score gaps w/ environment: Flynn effect, stereotype threat, test bias, schooling, nutrition.