

Development and Learning

AP Psychology ■ Unit 3

AP Psychology



What we will cover

- 1 Studying Development
- 2 Physical Development
- 3 Gender and Sexual Orientation
- 4 Cognitive Development
- 5 Language Development
- 6 Social and Emotional Development



Studying Development

- Is change **continuous** (gradual and smooth) or **discontinuous** (in stages)?
- Is a trait **stable** across life, or does it change?

Two designs for studying change over time

cross-sectional

compares **different age groups at one time** – fast and cheap

its weakness

differences may come from the **cohort** rather than from age: an 80-year-old grew up in a different world, not just a longer one

longitudinal

follows the **same people** over years – no cohort confound

its weakness

slow, expensive, and people **drop out**, often not at random

the three debates

nature/nurture, stability/change, and continuity/discontinuity

When a study reports that “older people are more conservative”, ask which design. Cross-sectional data cannot tell aging from cohort.

Two research designs, and what each costs

Cross-sectional study

A **cross-sectional study** compares different ages at one time – fast, and it confounds age with generation.

Longitudinal study

A **longitudinal study** follows the same people for years – it separates age from cohort, and loses participants along the way.

What the field asks

Developmental psychology runs three questions through every topic: nature and nurture, stability and change, continuity and stages.

Socialization

Socialization is how a child learns the norms and **gender roles** of the culture – from family, peers, school and media.

A cohort effect is the standard criticism of a cross-sectional finding. Name it, and say which way it would bias the result.



Physical Development

Development before birth can be disrupted by **teratogens** (harmful agents such as alcohol), maternal illness, genetic mutations, and hormonal or environmental factors.

The **visual cliff** experiment shows that infants perceive depth early.

Physical development, from reflexes to puberty

reflexes

newborn rooting, sucking, grasping and Moro reflexes – their presence indicates **healthy neural development**

the order

the **sequence** is the same everywhere; only the **rate** varies

adolescence

the **growth spurt** and **puberty**

primary sex characteristics

the reproductive organs themselves

secondary sex characteristics

the non-reproductive signs – body hair, voice change, breast development

later life

sensory acuity, muscle mass and reaction time decline; crystallised knowledge does not

“Sequence fixed, rate variable” is the sentence to write. A child walking late is not developing in a different order.

Physical development, start to end

Newborn reflexes

The **rooting reflex** turns the head towards a touch on the cheek – present at birth, gone by four months.

Language

Babbling, then the **one-word stage** at about a year, then telegraphic speech – the same sequence in every language.

Adolescence

The **adolescent growth spurt** and puberty, with **identity versus role confusion** as Erikson's stage for the period.

Later life

Menopause ends fertility; **adverse childhood experiences (ACEs)** predict health decades later.

Separation anxiety appears at about eight months in every culture – evidence that attachment is maturational, not learned.

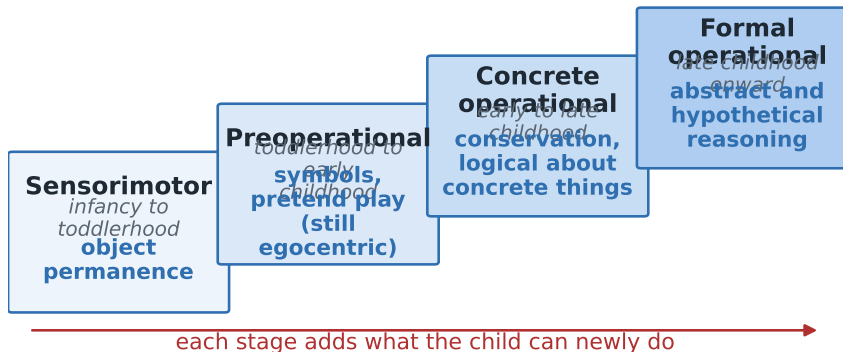




What becomes possible, and what is still missing

Piaget's four stages: each one names what becomes possible, and what is still missing.

What becomes possible, and what is still missing, in detail



Piaget's four stages, each defined by what the child can newly do

Cognitive Development

Adult cognition changes too, and here the fluid/crystallised split from Unit 2 returns: reasoning speed declines while accumulated knowledge does not. **Dementia** is a decline beyond normal ageing.

- **Sensorimotor stage** (infancy to toddlerhood): the child learns through senses and action, and develops **object permanence** – knowing an object still exists when hidden.
- **Preoperational stage** (toddlerhood to early childhood): the child uses symbols and pretend play but shows **egocentrism** (difficulty taking another view) and lacks **conservation** (knowing quantity stays the same when shape changes).
- **Concrete operational stage** (early to late childhood): the child reasons logically about concrete things and gains conservation.
- **Formal operational stage** (late childhood onward): abstract and hypothetical reasoning becomes possible.

Vygotsky: development is social

the claim

children learn **through interaction** with more capable others, not by solitary discovery

zone of proximal development

the gap between what a child can do **alone** and what they can do **with help**

scaffolding

the support a teacher gives inside that zone, withdrawn as the child takes over

against Piaget

Piaget saw fixed stages driven from within; Vygotsky saw culture and language driving development from outside

Teaching aimed *at* the current level teaches nothing new. Teaching aimed just above it is where learning happens – that is the whole practical point of the ZPD.



Language Development

Children generalise rules before they master exceptions, which produces **overgeneralization** – saying "goed" instead of "went".

This is evidence that they are learning rules, not just copying.

The sequence of language, everywhere the same

language

a shared system of **arbitrary** symbols used to communicate

the order

gestures , then **cooing** , **babbling** , one-word, **telegraphic speech** , then full sentences

overgeneralisation

“goed” and “foots” – evidence the child has learned the **rule**, not just the words

critical period

a window in which language is acquired far more easily; after it, fluency is much harder to reach

An error like “goed” is a sign of **progress**. The child who says “went” first has memorised it; the child who says “goed” has extracted a rule.



Social and Emotional Development

Research identifies **parenting styles** :
authoritarian (high demands, low warmth),
authoritative (high demands, high warmth),
and **permissive** (low demands, high warmth).

Peer relationships develop through **parallel play** and **pretend play** in childhood, and adolescents rely on peers more as they age.

Two theories of the whole lifespan

Erikson

eight stages of **psychosocial development** , each posing a **conflict to resolve**

the adolescent one

identity against role confusion – the stage AP asks about most

the pattern

trust, autonomy, initiative, industry, identity, intimacy, generativity, integrity

ecological systems theory

development as **nested environments**: the immediate family, then school and neighbourhood, then wider society and culture

the point

a child is shaped by settings they are never in – a parent's workplace, a national policy

Erikson looks *inside* at the task each age must resolve; ecological systems theory looks *outside* at the layers pressing on it.

Attachment styles

- **Attachment** is the emotional bond between infant and caregiver, studied with the **strange situation** .
- **Secure attachment** against the insecure forms – **avoidant** , **anxious** , **disorganized** .
- Monkeys chose **contact comfort** over food, which changed how attachment was understood.

The **reunion** is the discriminating moment, not the separation.

Attachment styles, in detail

STYLE	ON SEPARATION	AT REUNION — THE TELL
SECURE	distressed	seeks contact, is comforted, returns to exploring
ANXIOUS (resistant)	highly distressed	seeks contact <i>and</i> resists it; not comforted
AVOIDANT	little distress shown	ignores or avoids the caregiver
DISORGANISED	variable	no consistent strategy — approach and fear together

Monkeys chose **contact comfort** over food, which changed how attachment was understood.



Classical Conditioning

The **behavioral perspective** explains behaviour through learning rather than thought.

- An **unconditioned stimulus (UCS)** naturally produces an **unconditioned response (UCR)** – food causes salivation.
- A **neutral stimulus** paired with the UCS becomes a **conditioned stimulus (CS)**, producing a **conditioned response (CR)**.
- **Acquisition** depends on the order and timing of the pairing.
- **Extinction** occurs when the CS is no longer paired with the UCS; **spontaneous recovery** is the reappearance of an extinguished CR.
- **Generalization** is responding to similar stimuli; **stimulus discrimination** is responding only to the exact CS.

Classical Conditioning, continued

Emotional responses can be conditioned, and **taste aversion** shows that some associations are learned in a single trial because they aided survival.

Habituation is a diminished response to a repeated stimulus.

The extra classical-conditioning terms

higher-order conditioning

an established CS acts as the UCS for a **new** one – so a bell conditioned to food can itself condition a light

generalisation

stimuli *similar* to the CS also trigger the response

discrimination

learning to respond only to the exact CS

extinction

the CR fades when the CS appears repeatedly **without** the UCS

spontaneous recovery

the CR reappears after a rest – so extinction **suppresses** the learning, it does not erase it

Spontaneous recovery is the evidence for that last point, and the exam uses it to test whether you think extinction is forgetting. It is not.

The reinforcement schedules

Continuous reinforcement

Continuous reinforcement rewards every response: fastest learning, and fastest extinction.

Partial reinforcement

Partial reinforcement rewards some responses: slower learning, and far more resistant to extinction.

Ratio schedules

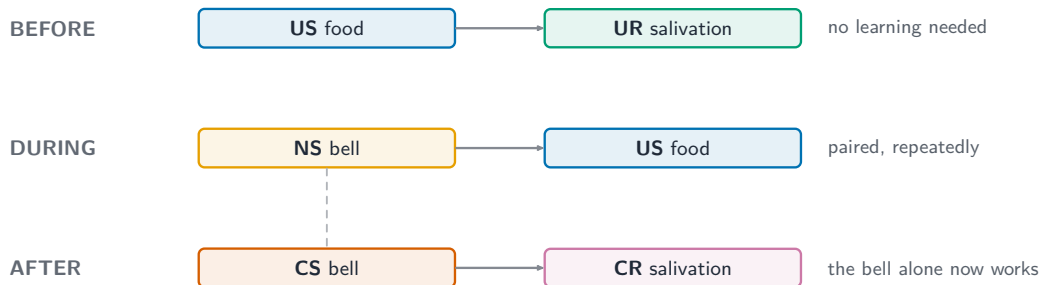
Fixed-ratio rewards every n th response (a pause after each reward); **variable-ratio** rewards on average every n th – the highest, steadiest rate, and how a slot machine works.

Interval schedules

Fixed-interval rewards the first response after a set time (a scallop of activity before it); **variable-interval** produces slow, steady responding.

Reinforcement schedules predict the *pattern* of responding, not just the amount. Sketch the cumulative record and the differences are obvious.

Conditioning, in three stages



NS and CS are the same stimulus at different times, and so are UR and CR.
Identify the US first – everything else follows from it



Operant Conditioning

- **Reinforcement** increases a behaviour; **punishment** decreases it.
- **Positive** means something is added; **negative** means something is removed. So **negative reinforcement** increases behaviour by removing something unpleasant – it is not punishment.
- A **primary reinforcer** satisfies a biological need; a **secondary reinforcer** (money) is learned.
- **Shaping** rewards **successive approximations** of a target behaviour.

The four operant procedures

Reinforcement increases a behaviour; **punishment** decreases it. Positive adds; negative removes.

What conditioning produces by accident

superstitious behavior

a consequence reinforces an **unrelated** action – the ritual before the free throw

learned helplessness

repeated **uncontrollable** aversive events teach an organism to stop trying, even once escape becomes possible

instinctive drift

a conditioned behaviour drifts back toward the species' instinctive pattern

shaping

reinforcing **successive approximations** toward a target behaviour

Learned helplessness is the bridge from the learning unit to the clinical one – it is a leading model of how depression is acquired.

The four operant procedures, in detail

		BEHAVIOUR INCREASES	BEHAVIOUR DECREASES
ADD	POSITIVE REINFORCEMENT add something wanted — praise, a treat	POSITIVE PUNISHMENT add something unwanted — a fine, extra work	
REMOVE	NEGATIVE REINFORCEMENT remove something unwanted — the alarm stops	NEGATIVE PUNISHMENT remove something wanted — a phone taken away	

Two questions fix every case: is something **added** or **removed** (positive/negative), and does the behaviour then **rise** or **fall** (reinforcement/punishment)?



Observational and Cognitive Learning

Not all learning needs direct experience.

Social learning theory shows that behaviour can be learned by **observation** and **modeling** – the basis of the Bobo doll findings on imitated aggression.

Learning without reinforcement

insight learning

a **sudden** solution with no gradual conditioning – Köhler's chimpanzee and the stacked boxes

latent learning

learning that happens **without reinforcement** and stays hidden until there is a reason to show it

cognitive map

Tolman's rats had learned the maze while wandering it unrewarded, and ran it well the moment food appeared

observational learning

learning by watching a **model** – Bandura's Bobo doll

All three show that learning and **performance** are different things. Reinforcement affects whether behaviour is shown, not whether it was learned.

Worked example – applying a concept to a detail

2024 exam: *“Explain how Jean Piaget’s concept of assimilation could relate to Gavin’s experience with the glass marble.”*

- **Full marks:** *“Gavin already had a schema for balls, which bounce. He assimilated the marble into that schema by treating it as a ball and trying to bounce it.”*
- Define the term **and** tie it to the specific detail in the stimulus.

A definition alone earns nothing on an application item, and so does retelling the scenario. Both halves, in one sentence.

Exam tips

- **Negative reinforcement** increases behaviour. If you can say what was *removed*, and the behaviour went *up*, it is not punishment.
- Match a Piaget stage to its achievement – object permanence, conservation, abstract reasoning – rather than to an age.
- **Classical** conditioning links two stimuli and produces an involuntary response; **operant** conditioning links behaviour to consequence.
- **Variable-ratio** schedules resist extinction best. Use it whenever a question describes gambling-like persistence.
- Keep **critical period** for the narrow window and **sensitive period** for the softer one.
- On scenario questions, name the term and then point at the detail in the scenario that proves it. The detail is what earns the mark.



Unit 3 – key takeaways

1

Piaget

name the achievement, not just the age

2

Classical vs operant

two stimuli vs behaviour–consequence

3

Reinforcement

negative reinforcement *increases* behaviour

4

Schedules

variable-ratio resists extinction (gambling)

Check yourself

- 1 Seatbelt beep stops when you buckle: reinforcement or punishment?
- 2 Object permanence: which Piaget stage?
- 3 Gambling persistence: which schedule?
- 4 Classical or operant: salivating to a bell?

Answers: negative reinforcement ■ sensorimotor ■ variable-ratio ■ classical