HUMAN DEVELOPMENT · STUDY GUIDE

Exam 4 Study Guide

This guide covers chapters 7 and 8, from the second birthday to about age eleven. You will see a toddler become an imaginative preschooler who thinks in symbols but not yet in logic, then a schoolchild whose thinking finally holds still, who is measured, compared and asked the first serious question: am I good at this? Work one chapter at a time. Read the "what to know" paragraphs, copy the tables out by hand, then try each worked case with the steps covered. Finish each chapter with its ten self-test items. The cram sheet at the end puts every stage and number in one place.

WHAT THIS GUIDE COVERS

- Chapter 7 · preschool growth, the brain at about 90%, myelination, pruning and lateralization; gross and fine motor skills; the symbolic function, egocentrism, centration, conservation and theory of mind; ZPD, scaffolding, private speech, fast mapping and overregularization; self-concept, initiative vs. guilt; Parten's play, gender development and Baumrind's four styles.
- Chapter 8 · school-age growth and health threats; reversibility, conservation and horizontal décalage, class inclusion, seriation and transitivity; Spearman, Cattell and Horn, Gardner and Sternberg; Binet, mental age and deviation IQ (mean 100, SD 15); Kohlberg's three levels and six stages and Gilligan's critique; industry vs. inferiority, Harter's domains, sociometric status and coregulation.

CHAPTER 7

Early Childhood

Read it in full: **Chapter 7 in the textbook**. Practice it in the lab: **Preoperational Limits** and **Parenting Styles**.

What to know

After infancy, growth slows to about 2 to 3 inches and 4 to 5 pounds a year. The top-heavy toddler leans out: legs grow faster than the head, baby fat melts and the center of gravity drops, which helps balance. Boys average slightly taller and heavier, but the overlap is huge. The brain reaches about **90% of adult weight by age 5 or 6**, through better wiring, not new neurons. **Myelination**

speeds pathways for attention, movement and hand-eye coordination, and the **corpus callosum** links the hemispheres. **Synaptic pruning** trims unused links. **Lateralization**, specialization of the two hemispheres, advances, and handedness is usually settled by about age five.

Gross motor skills (running, hopping, climbing, throwing) mature ahead of **fine motor** skills (crayons, buttons, scissors, laces), because finger control depends on slower-maturing brain regions. That is why a four-year-old can gallop but not tie a shoe. Drawing shows the path: scribbles near two, shapes near three, and "tadpole" people by three or four. The cephalocaudal and proximodistal rules still hold.

Piaget's **preoperational stage** (about 2 to 7) is defined by the **symbolic function**: one thing can stand for another. Words, pretend play, drawing and deferred imitation all grow from it. "Preoperational" means the child lacks **operations**, reversible mental actions that follow logic. Its limits: **egocentrism** (trouble taking another's view, shown in the three-mountains task), **centration** (fixing on one feature), **irreversibility** (cannot mentally undo a change), **animism** (objects have feelings) and confusing appearance with reality. Together these explain failures of **conservation**: the tall thin glass seems to hold "more."

Piaget often underestimated preschoolers. In a simpler hide-the-boy-from-the-policeman task, three- and four-year-olds take others' views well. Around age 4 comes **theory of mind**: knowing others have beliefs, even false beliefs, that differ from your own. In the **false-belief test**, a toy is moved while a character is away. Younger children say she will look where the toy really is; by about four, most say she will look where she last saw it.

Lev Vygotsky's **sociocultural theory** holds that thinking is social first: a skill is done with a more capable partner, then alone. The **zone of proximal development** is the gap between solo and assisted performance. **Scaffolding** is support tuned to need and then withdrawn. The **more knowledgeable other** can be a parent, teacher or slightly older peer. Piaget saw self-talk as aimless egocentric speech; Vygotsky saw **private speech**, a self-guiding tool that rises on hard tasks and later becomes silent inner speech.

Vocabulary explodes from a few hundred words at two to about 10,000 understood by six. **Fast mapping** forms a rough meaning after one or two exposures. Grammar grows from telegraphic

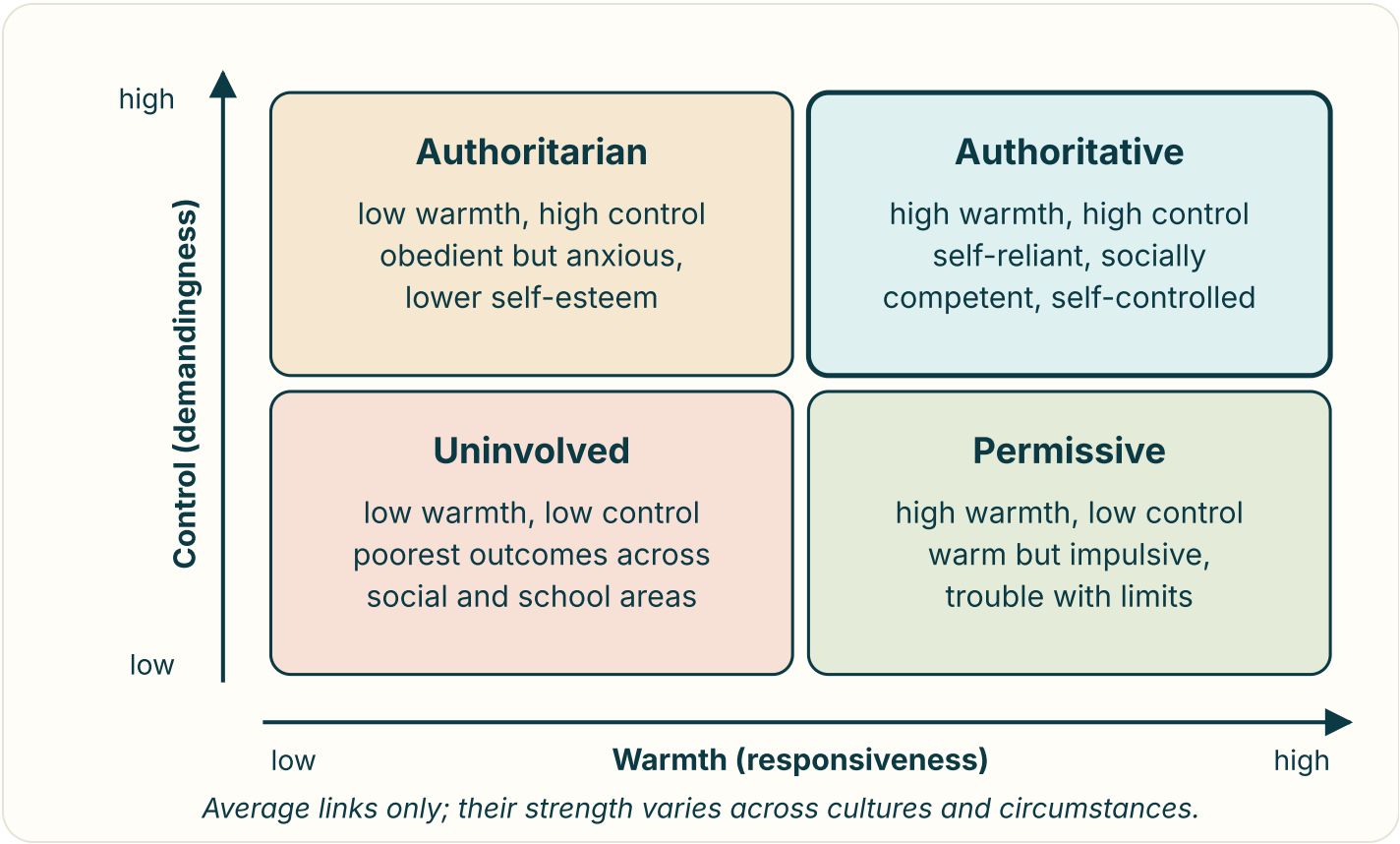
phrases to full sentences. **Overregularization** ("I goed," "two foots") shows the child has found a rule and is stretching it too far. It is a good sign, and irregular forms return within a year or two.

The early **self-concept** is concrete (possessions, looks, skills) and unrealistically positive. **Self-conscious emotions** (pride, shame, guilt, embarrassment) now appear, and **emotional regulation** improves with frontal-lobe maturation and adult coaching. Erikson's third stage is **initiative vs. guilt**. Encouraged plans and questions build **purpose**; constant criticism builds guilt. Praising effort supports purpose better than praising fixed traits.

Mildred Parten traced play from **solitary** and **onlooker** to **parallel** (side by side, not together), **associative** and **cooperative** play. By content, play can be functional, constructive, **sociodramatic** (pretend with roles) or games with rules. In gender development, **gender identity** comes by about 2 to 3, gender stability around 4 and **gender constancy** by about 6 to 7 (Kohlberg). Children learn roles through social learning and gender schemas, and **gender segregation** in play is near-universal.

Diana Baumrind crossed two dimensions, **warmth** (responsiveness) and **control** (demandingness). **Authoritative** parents are high on both and raise the most self-reliant, competent children on average. **Authoritarian** parents are high control, low warmth ("because I said so"), linked to anxious, less confident children. **Permissive** parents are warm but under-demanding, linked to impulsive children. **Uninvolved** parents are low on both, with the poorest outcomes. These are averages, and their strength varies by culture.

> **LOCK THESE IN**
>
> - Growth 2 to 3 in and 4 to 5 lb a year; brain about 90% of adult weight by 5 to 6; handedness settled by about 5.
> - Gross motor matures before fine motor.
> - Preoperational (2 to 7): symbolic function, but egocentrism, centration, irreversibility, animism; fails conservation.
> - Theory of mind and passing the false-belief test emerge around age 4.
> - Vygotsky: ZPD, scaffolding, more knowledgeable other, private speech (not aimless).
> - About 10,000 words understood by 6; fast mapping; overregularization shows rule learning.
> - Erikson: initiative vs. guilt, virtue purpose.
> - Baumrind: authoritative (high warmth, high control) predicts the best average outcomes.



Baumrind's four parenting styles. Warmth runs left to right and control runs bottom to top. Authoritative parenting pairs high warmth with firm, explained limits.

Key terms and comparisons

Term	What it means	Example
Symbolic function	One thing stands for another	A banana becomes a phone
Egocentrism	Hard to take another's view	Three-mountains task
Centration	Fixes on one feature	Judges juice by height alone
Irreversibility	Cannot mentally undo a change	"It's more now" after pouring
Animism	Life and feelings in objects	"The cloud is chasing us"
Theory of mind	Others have beliefs, even false ones	Passes the false-belief test at about 4
Fast mapping	Rough meaning after one or two exposures	Learns "koala" from one book
Overregularization	A rule applied too widely	"I goed," "two foots"
Private speech	Self-talk that guides thinking	"Now the red piece goes here"
Gender constancy	Gender stays the same despite looks	About age 6 to 7

Motor skills by age

Around age	Gross motor	Fine motor
2 to 3	Runs, kicks, walks up stairs, pedals a tricycle	Scribbles, stacks blocks, turns pages
3 to 4	Jumps with both feet, hops, climbs	Simple shapes, child scissors, feeds self
4 to 5	Catches a bounced ball, throws overhand	Copies a square, draws a person
5 to 6	Skips, runs smoothly, training wheels	Copies letters, cuts on a line, starts laces

Play and parenting

Item	Key point	Note
Parten's social play	Solitary, onlooker, parallel, associative, cooperative	Grows more social with age
Sociodramatic play	Pretend with plots and roles	Practices symbols, perspective, self-control
Authoritative	High warmth, high control	Self-reliant, socially competent
Authoritarian	Low warmth, high control	Obedient but anxious
Permissive	High warmth, low control	Impulsive, trouble with limits
Uninvolved	Low warmth, low control	Poorest outcomes

Worked cases

WORKED CASE 1 · DIAGNOSING A CONSERVATION ERROR

Four-year-old Mateo watches two equal rows of six coins. One row is spread out, and he says it now has more. Explain his error in Piaget's terms.

STEP 1 · NAME THE TASK

This is conservation of number.

STEP 2 · FIND THE CENTRATION

He fixes on the length of the row and ignores how many coins are in it.

STEP 3 · FIND THE IRREVERSIBILITY

He cannot mentally push the coins back together to see nothing was added.

STEP 4 · PLACE THE STAGE

He is **preoperational**. Number conservation usually arrives around 6 to 7, in concrete operations.

WORKED CASE 2 · SCAFFOLDING A PUZZLE

Five-year-old Zoe can do a 12-piece puzzle alone but gets stuck on a 30-piece one. Her grandfather helps. Describe good scaffolding.

STEP 1 · LOCATE THE ZPD

The 30-piece puzzle is beyond her solo level but within reach with help, so it sits in her **zone of proximal development**.

STEP 2 · GIVE JUST ENOUGH HELP

He suggests finding the edge pieces first, then sorting by color.

STEP 3 · HAND BACK CONTROL

As she gains speed he steps back, offering hints only at sticking points.

STEP 4 · LISTEN FOR PRIVATE SPEECH

If she mutters "blue ones go up top," she is guiding herself. Vygotsky would see thinking going inward.

WORKED CASE 3 · NAMING THE PARENTING STYLE

Two parents of a five-year-old: Dana says "bedtime is 8 because you need sleep" and gives hugs at lights out. Lee says "bedtime is 8, because I said so" and ignores protests. Name each style.

STEP 1 · RATE DANA

Clear limit plus a reason and affection: high control, high warmth, so **authoritative**.

STEP 2 · RATE LEE

Firm limit, no reason, little warmth: high control, low warmth, so **authoritarian**.

STEP 3 · PREDICT, WITH CARE

On average, authoritative parenting predicts more self-reliant, competent children. These are averages shaped by culture, not destiny.

TRAPS PEOPLE FALL INTO

- **Thinking the preschool brain grows by adding neurons.** Growth comes from myelination, pruning and better wiring.
- **Calling conservation errors stubbornness.** They are the honest output of centration and irreversibility.
- **Assuming Piaget had the ages exactly right.** Simpler tasks show preschoolers can take others' views earlier.
- **Treating private speech as a problem.** Vygotsky saw it as a self-guiding tool that becomes inner speech.
- **Correcting "I goed" as a step backward.** Overregularization shows the child has learned the rule.
- **Mixing up authoritative and authoritarian.** Authoritative adds warmth and reasons; authoritarian is strict without them.
- **Placing gender constancy at age 2.** Identity comes at 2 to 3; constancy at about 6 to 7.
- **Treating parenting links as rules.** They are averages that vary with culture and circumstance.

Chapter 7 self-test · ten items

1. By about age 5 or 6, the brain has reached roughly what share of adult weight?

A. 90%
B. 50%
C. 75%
D. 100%

A. 90% The brain is about 90% of adult weight by 5 to 6, through wiring rather than new neurons.

2. Why do fine motor skills lag behind gross motor skills?

A. Preschool hands are still too small to grip
B. They need far more muscle strength
C. Children simply prefer large movements
D. They depend on slower-maturing brain regions

D. They depend on slower-maturing brain regions Small-muscle precision depends on brain regions that mature later.

3. The defining achievement of the preoperational stage is

A. object permanence
B. class inclusion
C. the symbolic function
D. abstract, hypothetical reasoning

C. the symbolic function Letting one thing stand for another powers language, pretend play and drawing.

4. A child thinks a doll across the table sees exactly what she sees. This is

A. animism
B. egocentrism
C. seriation
D. transitivity

B. egocentrism The three-mountains task shows trouble taking another's viewpoint.

5. Theory of mind, shown by passing a false-belief test, typically emerges around

A. age 2
B. age 7
C. age 11
D. age 4

D. age 4 By about four most children predict a character will look where she last saw the toy.

6. Vygotsky saw a child talking to herself during a hard task as

A. egocentric speech with no purpose
B. private speech that guides thinking
C. a sign of language delay
D. practice for adult conversation

B. private speech that guides thinking Private speech rises on hard tasks and later becomes inner speech.

7. A child says "two mouses." This is an example of

A. overregularization
B. fast mapping
C. telegraphic speech
D. centration

A. overregularization The child applies the add -s rule to an irregular word.

8. Erikson's virtue for initiative vs. guilt is

A. will
B. competence
C. purpose
D. hope

C. purpose Encouraged initiative yields purpose.

9. Two children play side by side with the same blocks but not together. Parten calls this

A. cooperative play
B. parallel play
C. onlooker play
D. associative play

B. parallel play Parallel play is the same activity side by side without shared goals.

10. Which parenting style is warm but under-demanding?

A. Permissive
B. Authoritative
C. Authoritarian
D. Uninvolved

A. Permissive Permissive parents are high in warmth and low in control.

CHAPTER 8

Middle Childhood

Read it in full: **Chapter 8 in the textbook**. Practice it in the lab: **Concrete Operations** and **Kohlberg Dilemma**.

What to know

In middle childhood (about 6 to 11), growth is calm: about 2 to 3 inches (5 to 7 cm) and 5 to 7 pounds (2 to 3 kg) a year. Baby teeth fall out and permanent teeth erupt. Long bones lengthen at the **growth plates**, and a hand X-ray can show bone age. The brain is about 90 to 95% of adult size by six, but pruning and myelination continue. Near the end of this period many girls start the growth spurt that brings them to puberty a year or two before boys. Motor skills grow smooth and coordinated, sex differences are small, and what children need most is opportunity to play and move.

Middle childhood is the **healthiest, safest** stretch of life, with the lowest death rates. The remaining threats are largely preventable. **Obesity** (judged by BMI percentile for age and sex) is the signature problem and tracks into adulthood. **Asthma** is the most common chronic illness of childhood. **Unintentional injury** (cars, bikes, drowning) is the leading cause of death. Myopia, dental caries and attention or learning difficulties round out the list.

Around seven, children enter Piaget's **concrete operational stage** (about 7 to 11). An **operation** is a mental action that can be undone. Two habits make it work: **reversibility** (run a change backward in the mind) and **decentration** (attend to several features at once). **Conservation** is the

flagship: quantity stays the same despite a change in shape. The conservations arrive one by one, number first, then liquid, mass and length, then weight, then volume. Piaget called this staggering **horizontal décalage**.

Other new operations: **class inclusion** (ten roses and five daisies: there are more flowers than roses), **seriation** (ordering by length) and **transitivity** (if A is longer than B and B than C, then A is longer than C, without lining them up). The logic works on the concrete, things a child can picture or handle. Abstract "what if" reasoning waits for formal operations in adolescence. Vygotsky adds that guidance within the ZPD speeds the process.

Theories of intelligence differ. Charles Spearman proposed a single **general intelligence (g)**. Raymond Cattell and John Horn split **fluid** intelligence (reasoning on new problems, which peaks early) from **crystallized** intelligence (knowledge and vocabulary, which grows for decades). Howard Gardner proposed **multiple intelligences**: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, intrapersonal and naturalist. Robert Sternberg's **triarchic theory** names analytical, creative and practical intelligence.

Alfred Binet and Théodore Simon built the first practical test in France in 1905 to find schoolchildren who needed extra help, introducing **mental age**. Lewis Terman's Stanford-Binet popularized the **IQ**, originally mental age divided by chronological age times 100. David Wechsler built the WISC. Modern tests use a **deviation IQ** with a **mean of 100 and a standard deviation of 15**, so about two-thirds of children score 85 to 115, and scores below 70 or above 130 are each rare. IQ is reliable and predicts school achievement well, but it misses creativity, motivation, social skill and character, and can misjudge children from cultures the test did not sample. Scores rose over the twentieth century (the **Flynn effect**) and can dip under **stereotype threat**.

Building on Piaget's shift from rigid **heteronomous** to flexible **autonomous** morality, Lawrence Kohlberg posed dilemmas such as **Heinz**, who must decide whether to steal a drug to save his wife. The reason, not the choice, sets the stage. **Preconventional**: stage 1 obedience (avoid punishment), stage 2 self-interest (fair exchange). **Conventional**: stage 3 approval (good boy, nice girl), stage 4 law and order. **Postconventional**, rarely reached: stage 5 social contract, stage 6

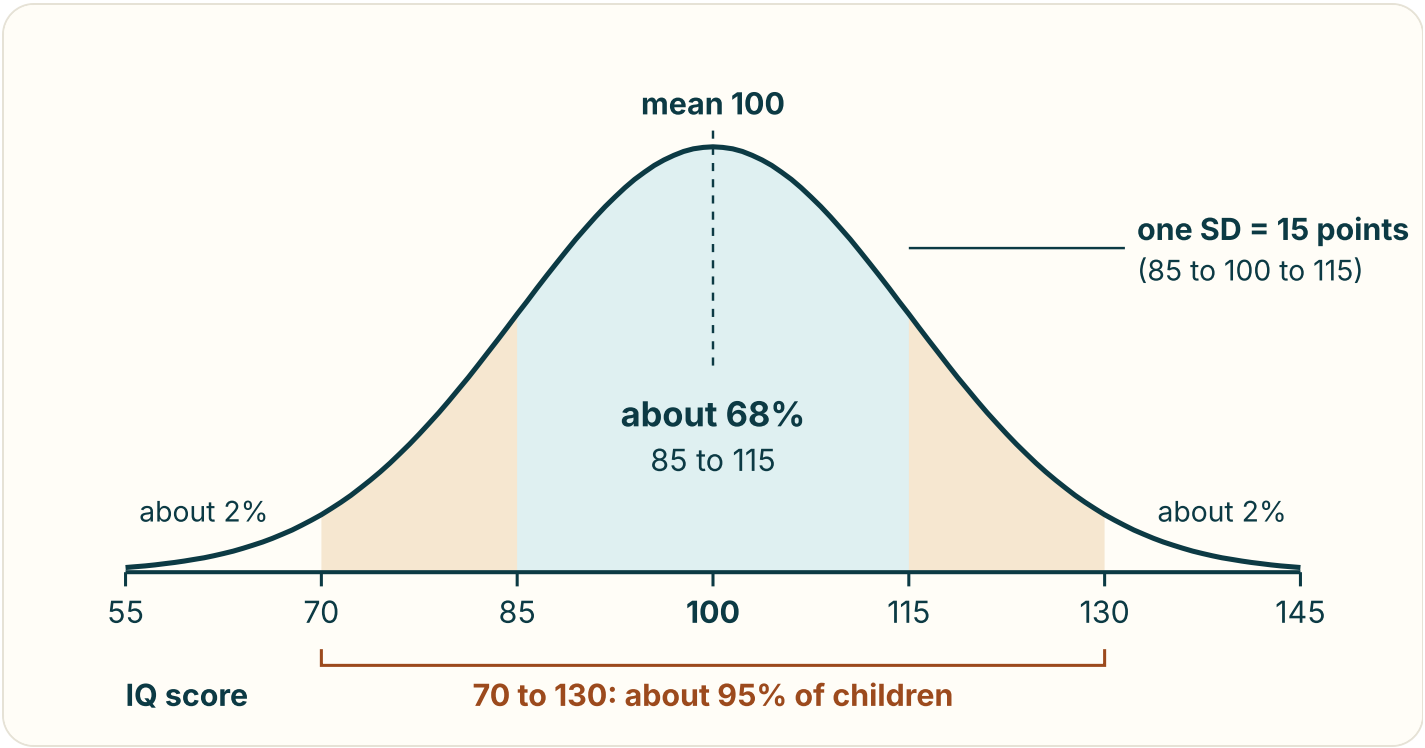
universal ethical principles. Most school-age children reason at the preconventional level and move toward conventional.

Kohlberg's theory has strong critics. Carol Gilligan argued it undervalues an **ethic of care** and may reflect its all-male original sample. Others point to bias toward Western, individualistic values, and to the **reasoning-behavior gap**: knowing why cheating is wrong does not stop a child from cheating.

Erikson's fourth stage is **industry vs. inferiority** (about 6 to 11). Effort met with success builds industry and **competence**; repeated failure or ridicule builds inferiority. The self-concept becomes trait-based and comparative through **social comparison**. Following Susan Harter, **self-esteem** is domain-specific (academic, athletic, social, appearance, conduct) before it becomes global. Friendships rest on trust and loyalty. **Sociometric status** sorts children as popular, rejected, neglected, controversial or average; rejected children face the most risk. Families shift toward **coregulation** (Eleanor Maccoby): parents supervise from a step back while the child manages the moment. Bronfenbrenner's nested systems frame this widening world.

LOCK THESE IN

- Growth about 2 to 3 in and 5 to 7 lb a year. Healthiest, safest years of life.
- Obesity is the signature problem; asthma the most common chronic illness; unintentional injury the leading cause of death.
- Concrete operations (7 to 11): reversibility and decentration; conservation, class inclusion, seriation, transitivity.
- Horizontal décalage: number, then liquid, mass, weight, volume.
- Spearman g; Cattell and Horn fluid vs. crystallized; Gardner eight intelligences; Sternberg analytical, creative, practical.
- Deviation IQ: mean 100, SD 15; about two-thirds score 85 to 115.
- Kohlberg: preconventional (1, 2), conventional (3, 4), postconventional (5, 6). Most children are preconventional.
- Industry vs. inferiority (competence). Self-esteem is domain-specific first (Harter).



Deviation IQ drawn to scale. With a mean of 100 and a standard deviation of 15, about 68% of children score between 85 and 115 and about 95% between 70 and 130.

Key terms and comparisons

Term	What it means	Example
Reversibility	Running a change backward in the mind	Pour the water back: same amount
Decentration	Attending to several features	Height and width together
Horizontal décalage	Related skills mastered at different ages	Mass before weight
Class inclusion	A subclass sits inside a larger class	More flowers than roses
Seriation	Ordering along a dimension	Sticks from short to long
Transitivity	Inferring A to C through B	A longer than B, B than C
Flynn effect	IQ scores rose across generations	Twentieth century gains
Stereotype threat	Anxiety about confirming a group stereotype	Scores dip under that pressure
Coregulation	Shared, transitional control	Parents supervise from a step back
Social comparison	Judging self against others	"Better at reading than most kids"

Conservation tasks

Task	What is transformed	Typically mastered
Number	A row of tokens spread out	About 6 to 7 years
Liquid	Water poured into a taller glass	About 7 years
Mass	Clay ball rolled into a sausage	About 7 to 8 years
Weight	Same clay judged for heaviness	About 9 to 10 years
Volume	Water displaced by the clay	About 11 to 12 years

Theories of intelligence

Theory	Proposed by	Core idea
General intelligence (g)	Spearman	One ability drives performance across tasks
Fluid and crystallized	Cattell and Horn	Reasoning on the fly vs. accumulated knowledge
Multiple intelligences	Gardner	Eight relatively independent intelligences
Triarchic	Sternberg	Analytical, creative and practical

Kohlberg's levels and stages

Level	Stage	What drives the reasoning
Preconventional	1 · Obedience	Avoid punishment
Preconventional	2 · Self-interest	What's in it for me? Fair exchange
Conventional	3 · Approval	Be good in others' eyes
Conventional	4 · Law and order	Uphold rules and the social system
Postconventional	5 · Social contract	Rules serve the greater good and can change
Postconventional	6 · Universal principles	Justice and dignity above any law

Worked cases

WORKED CASE 1 · RATIO IQ AND DEVIATION IQ

Using the old ratio formula, find the IQ of an 8-year-old with a mental age of 10. Then explain where a modern deviation IQ of 115 sits.

STEP 1 · RATIO FORMULA

IQ = (mental age ÷ chronological age) × 100.

STEP 2 · PLUG IN

(10 ÷ 8) × 100 = 1.25 × 100 = **125**.

STEP 3 · DEVIATION IQ

115 is one standard deviation (15 points) above the mean of 100.

STEP 4 · READ THE CURVE

About 68% of children score 85 to 115, so about 16% score above 115. A score of 115 is at about the 84th percentile.

CHECK IT

Modern tests no longer use the ratio; they place the child against age-mates on the curve.

WORKED CASE 2 · PLACING A HEINZ ANSWER

Asked about Heinz, three children answer. Ines: "He shouldn't steal, he'll go to jail." Kofi: "He should, his wife will be nice to him after." Ruth: "He shouldn't, if everyone stole the law would fall apart." Place each.

STEP 1 · INES

Focus on punishment: **stage 1**, preconventional.

STEP 2 · KOFI

Focus on what he gets back: **stage 2**, preconventional.

STEP 3 · RUTH

Focus on keeping the social system working: **stage 4**, conventional.

CHECK IT

The choice (steal or not) does not set the stage. The reason does.

WORKED CASE 3 · HORIZONTAL DÉCALAGE

Nine-year-old Sam says a clay ball rolled into a sausage still has the same amount of clay, but he is not sure it weighs the same. Explain.

STEP 1 · WHAT HE HAS

Conservation of mass, usually mastered about 7 to 8.

STEP 2 · WHAT HE LACKS

Conservation of weight, usually about 9 to 10.

STEP 3 · NAME IT

Mastering related conservations at different ages is **horizontal décalage**.

TRAPS PEOPLE FALL INTO

- **Thinking middle childhood is risky for health.** It is the healthiest period; the main threats are preventable.
- **Calling disease the leading cause of death at this age.** Unintentional injury leads.

- **Expecting all conservations at once.** They arrive task by task: horizontal décalage.
- **Crediting school-age children with abstract logic.** Concrete operations need things a child can picture; "what if" waits for adolescence.
- **Treating IQ as a measure of worth.** It predicts school achievement but misses creativity, character and practical skill.
- **Using mental age divided by age for modern scores.** Modern tests use a deviation IQ with mean 100 and SD 15.
- **Scoring the Heinz choice instead of the reason.** Kohlberg's stages rest on the reasoning.
- **Treating self-esteem as one number.** In middle childhood it is judged domain by domain first.

Chapter 8 self-test · ten items

1. A school-age child typically gains about how much height per year?

A. 5 to 6 inches
B. Less than 1 inch
C. 2 to 3 inches
D. 8 to 10 inches

C. 2 to 3 inches Growth is slow and steady at about 2 to 3 inches (5 to 7 cm) a year.

2. What is the most common chronic illness of childhood?

A. Obesity
B. Myopia
C. Diabetes
D. Asthma

D. Asthma Asthma is the most common chronic illness; obesity is the signature nutritional problem.

3. Which two abilities let a child conserve?

A. Reversibility and decentration
B. Centration and animism
C. Egocentrism and seriation
D. Fast mapping and transitivity

A. Reversibility and decentration Undoing the change in the mind and attending to several features at once.

4. Which conservation usually comes last?

A. Number
B. Liquid
C. Mass
D. Volume

D. Volume Number comes first and volume last, around 11 to 12.

5. Shown 10 roses and 5 daisies, a child says there are more flowers. This shows

A. seriation
B. transitivity
C. class inclusion
D. conservation of number

C. class inclusion She holds the whole class and the subclass in mind together.

6. Who proposed fluid and crystallized intelligence?

A. Charles Spearman
B. Cattell and Horn
C. Howard Gardner
D. Robert Sternberg

B. Cattell and Horn Fluid reasoning peaks early; crystallized knowledge grows for decades.

7. On a deviation IQ test, about two-thirds of children score between

A. 85 and 115
B. 70 and 130
C. 90 and 110
D. 100 and 130

A. 85 and 115 The mean is 100 and one standard deviation is 15 points.

8. Binet's original test was built to

A. rank children for gifted programs
B. screen army recruits
C. find children who needed extra help
D. measure creativity

C. find children who needed extra help It identified schoolchildren needing help and introduced mental age.

9. "I'll share so she shares with me." Which Kohlberg stage fits best?

A. Stage 1, obedience
B. Stage 2, self-interest
C. Stage 3, approval
D. Stage 5, social contract

B. Stage 2, self-interest Fair exchange for one's own benefit is stage 2, preconventional.

10. Carol Gilligan argued Kohlberg undervalued

A. the role of punishment
B. concrete operations
C. fluid intelligence
D. an ethic of care

D. an ethic of care She stressed responsibility and relationship, and noted the all-male original sample.

ONE PAGE

Cram sheet

Everything from chapters 7 and 8 in one place. Cover the right column and see if you can rebuild each row.

Numbers to know

Item	Value	Note
Preschool growth	2 to 3 in and 4 to 5 lb a year	Body leans out
Brain	About 90% of adult weight by 5 to 6; 90 to 95% of adult size by 6	Wiring, not new neurons
Handedness	Usually settled by about 5	Lateralization
Vocabulary	A few hundred words at 2; about 10,000 understood by 6	Fast mapping
Theory of mind	About age 4	False-belief test
Gender	Identity 2 to 3; stability about 4; constancy 6 to 7	Kohlberg's steps
School-age growth	2 to 3 in (5 to 7 cm), 5 to 7 lb (2 to 3 kg) a year	Teeth shed
Conservation ages	Number 6 to 7; liquid 7; mass 7 to 8; weight 9 to 10; volume 11 to 12	Horizontal décalage
Deviation IQ	Mean 100, SD 15	About two-thirds 85 to 115; about 95% 70 to 130
Ratio IQ	Mental age ÷ chronological age × 100	Old Stanford-Binet method
Binet test	1905, France	Find children who need help

Stages and styles

Item	Key point	Virtue or outcome
Preoperational (2 to 7)	Symbols; egocentric; centration; no conservation	Pretend play, language
Concrete operational (7 to 11)	Reversible logic on concrete things	Conservation, class inclusion, seriation
Initiative vs. guilt	Plans and questions	Purpose
Industry vs. inferiority	Competence through school and work	Competence
Authoritative parenting	High warmth, high control	Best average outcomes
Kohlberg levels	Preconventional, conventional, postconventional	Most children preconventional
Sociometric status	Popular, rejected, neglected, controversial, average	Rejected at most risk

Dr. Garg Learning · CC BY-SA 4.0