

4

Developing Through the Life Span

CHAPTER OVERVIEW

Developmental psychologists study the life cycle, from conception to death, examining how we develop physically, mentally, and socially. Chapter 4 covers physical, cognitive, and social development over the life span and introduces two major issues in developmental psychology: (1) whether development is best described as gradual and continuous or as a discontinuous sequence of stages and (2) whether the individual's personality remains stable or changes over the life span. The issue of the relative impact of genes and experience on behavior is the subject of Chapter 3.

Although there are not too many terms to learn in this chapter, there are a number of important research findings to remember. Pay particular attention to the stage theories of Piaget, Kohlberg, and Erikson, as well as to the discussion regarding intellectual stability during adulthood. Writing carefully prepared answers to the section preview items should be especially helpful in mastering the material in this chapter.

NOTE: Answer guidelines for all Chapter 4 questions begin on page 115.

CHAPTER REVIEW

First, skim this section, noting headings and boldface items. After you have read the section, review each objective by completing the sentences and answering the questions that follow it. As you proceed, evaluate your performance by consulting the answers beginning on page 115. Do not continue with the next section until you understand each answer. If you need to, review or reread the section in the textbook before continuing.

Introduction (p. 139)

David Myers at times uses idioms that are unfamiliar to some readers. If you do not know the meaning of the following expression in the context in which it appears in the text, refer to page 124 for an explanation: . . . *journey through life—from womb to tomb.*

Objective 1: State the three areas of change that developmental psychologists study, and identify the three major issues in developmental psychology.

1. Scientists who study physical, cognitive, and social changes throughout the life cycle are called _____.
2. One of the major issues in developmental psychology concerns the relative importance of genes and experience in determining behavior; this is called the _____ / _____ issue.
3. A second developmental issue, _____ / _____, concerns whether developmental changes are gradual or abrupt.
4. A third controversial issue concerns the consistency of personality and whether development is characterized more by _____ over time or by change.

Prenatal Development and the Newborn
(pp. 139–144)

Objective 2: Describe the union of sperm and egg at conception.

1. Conception begins when a woman's _____ releases a mature _____.
2. The few _____ from the man that reach the egg release digestive _____ that eat away the egg's protective covering. As soon as one sperm penetrates the egg, the egg's surface _____ all other sperm.
3. The egg and sperm _____ fuse and become one.

Objective 3: Define *zygote*, *embryo*, and *fetus*, and explain how teratogens can affect development.

4. Fertilized human eggs are called _____. During the first week, the cells in this cluster begin to specialize in structure and function, that is, they begin to _____. The outer part of the fertilized egg attaches to the _____ wall, forming the _____.
5. From about 2 until 8 weeks of age the developing human, formed from the inner cells of the fertilized egg, is called a(n) _____. During the final stage of prenatal development, the developing human is called a(n) _____.
6. Along with nutrients, a range of harmful substances known as _____ can pass through the placenta.
7. Moderate consumption of alcohol during pregnancy _____ (usually does not affect/can affect) the fetal brain. If a mother drinks heavily, her baby is at risk for the birth defects and mental retardation that accompany _____.

Objective 4: Describe some abilities of the newborn, and explain how researchers use habituation to assess infant sensory and cognitive abilities.

8. When an infant's cheek is touched, it will vigorously search for a nipple, a response known as the _____.
9. American psychologist _____ believed that the newborn experiences a "blooming, buzzing confusion." This belief is _____ (correct/incorrect).

Give some evidence supporting the claim that a newborn's sensory equipment is biologically prewired to facilitate social responsiveness.

10. (Close-Up) To study infants' thinking, developmental researchers have focused on a simple form of learning called _____, which involves a _____ in responding with repeated stimulation. Using this procedure, researchers have found that infants can discriminate _____, _____, and _____; they also understand some basic concepts of _____ and _____.

Infancy and Childhood (pp. 144–164)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 124–126 for an explanation: *toddler*; *wild growth spurt*; *formatted*; *fruitless*; *flop his beret*; *double take*; *realizes her "grandmother" is really a wolf*; *it gets high marks*; *cognitive milestones*; *concrete demonstrations . . . think for themselves*; *pit the drawing power*; *gosling*; *"Mere exposure"*; *mobile sperm banks*; *footprints on the brain*; *sneakily dabbed rouge*; *parenting styles . . . lax*; *heed this caution*.

Objective 5: Describe some developmental changes in a child's brain, and explain why maturation accounts for many of our similarities.

1. The developing brain _____ (over/under)produces neurons, with the number peaking at _____ (what age?). At birth the human nervous system _____ (is/is not) fully mature.
2. Between 3 and 6 years of age, the brain is developing most rapidly in the _____ lobes, which enable _____.
3. After puberty, a process of _____ shuts down some neural connections and strengthens others.
4. Biological growth processes that enable orderly changes in behavior are called _____.

Objective 6: Outline four events in the motor development sequence from birth to toddlerhood, and evaluate the effects of maturation and experience on that sequence.

5. Infants pass the milestones of _____ development at different rates, but the basic _____ of stages is fixed. They sit before they _____ and walk before they _____.
6. Genes play a _____ (major/minor) role in motor development.
7. Until the necessary muscular and neural maturation is complete, including the rapid development of the brain's _____, experience has a _____ (large/small) effect on behavior.

Objective 7: Explain why we have few memories of experiences during our first three years of life.

8. Our earliest memories generally do not occur before age _____.
9. This phenomenon has been called "_____".

10. Memories of the preschool years are very few because infants' _____ memories do not easily translate into their later _____.

Objective 8: State Piaget's understanding of how the mind develops, and discuss the importance of assimilation and accommodation in this process.

11. The first researcher to show that the thought processes of adults and children are very different was _____.
12. To organize and interpret his or her experiences, the developing child constructs cognitive concepts called _____.
13. The interpretation of new experiences in terms of existing ideas is called _____. The adaptation of existing ideas to fit new experiences is called _____.

Objective 9: Outline Piaget's four main stages of cognitive development, and comment on how children's thinking changes during these four stages.

14. The term for all the mental activities associated with thinking, remembering, communicating, and knowing is _____.
15. In Piaget's first stage of development, the _____ stage, children experience the world through their motor and sensory interactions with objects. This stage occurs between infancy and nearly age _____.
16. The awareness that things continue to exist even when they are removed from view is called _____. This awareness begins to develop at about _____ months of age.
17. Developmental researchers have found that Piaget and his followers _____ (overestimated/underestimated) young children's competence. For instance, babies have an understanding of _____, as Karen Wynn demonstrated.

18. According to Piaget, during the preschool years and up to age _____, children are in the _____ stage.
19. The principle that the quantity of a substance remains the same even when the shape of its container changes is called _____. Piaget believed that preschoolers _____ (have/have not) developed this concept.
20. Preschoolers unable have difficulty perceiving things from another person's point of view. This inability is called _____.
21. The child's growing ability to take another's perspective is evidence that the child is acquiring a _____. Between 3^{1/2} and 4, children come to realize that others may hold _____. Between 5 and 8, they learn that self-produced thoughts can create _____.
22. (Close-Up) The disorder characterized by deficient _____ and _____ interaction and an impaired _____ is _____. This disorder is related to malfunctions of brain areas that enable _____ to others. The "high functioning" form of this disorder is called _____.
23. (Close-Up) A new theory proposes that autism represents an "extreme _____ brain." According to this theory, girls tend to be _____, who are better than boys at reading facial expressions and gestures. Boys tend to be _____, who understand things in terms of rules or laws.
24. In contrast to Piaget's findings, researchers have more recently discovered that the ability to perform mental _____, to think _____, and to take another's _____ develops _____ (abruptly/gradually) during the preschool years.

25. Russian psychologist _____ noted that by age _____ children stop thinking aloud and instead rely on _____. When parents give children words, they provide, according to this theorist, a _____ upon which the child can build higher-level thinking.
26. Piaget believed that children acquire the mental abilities needed to comprehend mathematical transformations and conservation by about _____ years of age. At this time, they enter the _____ stage.
27. In Piaget's final stage, the _____ stage, reasoning expands from the purely concrete to encompass _____ thinking. Piaget believed most children begin to enter this stage by age _____.

Objective 10: Discuss psychologists' current views on Piaget's theory of cognitive development.

Explain briefly how contemporary researchers view Piaget's theory.

Objective 11: Define *stranger anxiety*.

28. Soon after _____ emerges and children become mobile, a new fear, called _____, emerges.
29. This fear emerges at age _____.

Objective 12: Discuss the effects of nourishment, body contact, and familiarity on infant social attachment.

- 30. The development of a strong emotional bond between infant and parent is called _____.
- 31. Harlow's studies of monkeys have shown that mother-infant attachment does not depend on the mother providing nourishment as much as it does on her providing the comfort of _____ . Another key to attachment is _____ .
- 32. Human attachment involves one person providing another with a _____ when distressed and a _____ from _____ which to explore.
- 33. In some animals, attachment will occur only during a restricted time called a _____ .
Konrad Lorenz discovered that young birds would follow almost any object if it were the first moving thing they observed. This phenomenon is called _____ .
- 34. Human infants _____ (do/do not) have a precise critical period for becoming attached.

Objective 13: Contrast secure and insecure attachment, and discuss the roles of parents and infants in the development of attachment and an infant's feelings of basic trust.

- 35. Placed in a research setting called the _____ , children show one of two patterns of attachment: _____ attachment or _____ attachment.

Contrast the responses of securely and insecurely attached infants to strange situations.

Discuss the impact of responsive parenting on infant attachment.

- 36. A father's love and acceptance for his children are _____ (comparable to/less important than) a mother's love in predicting their children's health and well-being.
- 37. Separation anxiety peaks in infants around _____ months, then _____ (gradually declines/remains constant for about a year). This is true of children _____ (in North America/throughout the world).
- 38. According to Erikson, securely attached infants approach life with a sense of _____ .

Objective 14: Assess the impact of parental neglect, family disruption, and day care on attachment patterns and development.

- 39. Harlow found that when monkeys reared in social isolation are placed with other monkeys, they reacted with either fear or _____ .
- 40. Most abused children _____ (do/do not) later become abusive parents.
- 41. Although most children who grow up under adversity are _____ and become normal adults, early abuse and excessive exposure to _____ may alter the development of the brain's chemical _____ .

42. When placed in a more positive and stable environment, most infants _____ (recover/do not recover) from disruptions in attachment.
43. Experts agree that child care per se _____ (does/does not) constitute a risk factor in children's development. High-quality child care consists of warm, supportive interactions with adults in an environment that is _____, _____, and _____. More important than time spent in day care in influencing a child's development are _____.

Objective 15: Trace the onset and development of children's self-concept.

44. The primary social achievement of childhood is the development of a _____, which occurs in most children by age _____.
45. A child's self-image generally becomes stable between the ages of _____ and _____, when children begin to describe themselves in terms of gender, group memberships, and psychological _____. Identify several characteristics of children who have formed a positive self-image.

Objective 16: Describe three parenting styles, and offer three potential explanations for the link between authoritative parenting and social competence.

46. Parents who impose rules and expect obedience are exhibiting a(n) _____ style of parenting.
47. Parents who make few demands of their children and tend to submit to their children's desires are identified as _____ parents.
48. Setting and enforcing standards after discussion

with their children is the approach taken by _____ parents.

49. Studies have shown that there tends to be a correlation between high self-esteem on the part of the child and the _____ style of parenting. This may be because this parenting style gives children the greatest sense of _____ over their lives.

Explain why the correlation between authoritative parenting and social competence does not necessarily reveal cause and effect.

Adolescence (pp. 164–175)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 126–127 for an explanation: *pays dividends; out of sync; intellectual summit; character—the psychological muscles for controlling impulses; moral ladder; throw a switch; talk is cheap; slack; psychosocial task; forge their identity; emotional ties with parents loosen; gap . . . morphing.*

Objective 17: Define *adolescence*.

- Adolescence is defined as the transition period between _____ and _____.
- The "storm and stress" view of adolescence is credited to _____, one of the first American psychologists to describe adolescence.

Objective 18: Identify the major physical changes during adolescence.

- Adolescence begins with the time of developing sexual maturity known as _____. A two-year period of rapid physical development begins in girls at about the age of _____.

and in boys at about the age of _____ . This growth spurt is marked by the development of the reproductive organs and external genitalia, or _____ characteristics, as well as by the development of traits such as pubic hair and enlarged breasts in females and facial hair in males. These nonreproductive traits are known as _____ characteristics.

4. The first menstrual period is called _____. In boys, the first ejaculation is called _____ .
5. The _____ (timing/sequence) of pubertal changes is more predictable than their _____ (timing/sequence).
6. Boys who mature _____ (early/late) tend to be more popular, self-assured, and independent; they also are at increased risk for _____ .
For girls, _____ (early/late) maturation can be stressful, especially when their bodies are out of sync with their _____. This reminds us that _____ and _____ interact.
7. The adolescent brain undergoes a selective _____ of unused connections. Also, teens' occasional impulsiveness and risky behaviors may be due, in part, to the fact that development in the brain's _____ lags behind that of the _____ .

Objective 19: Describe the changes in reasoning abilities that Piaget called formal operations.

8. Adolescents' developing ability to reason gives them a new level of _____ awareness and _____ judgment.
9. During the early teen years, reasoning is often _____ , as adolescents often feel their experiences are unique.

10. Piaget's final stage of cognitive development is the stage of _____. The adolescent in this stage is capable of thinking logically about _____ as well as concrete propositions. This enables them to detect _____ in others' reasoning and to spot hypocrisy.

Objective 20: Discuss moral development from the perspectives of moral thinking, moral feeling, and moral action.

11. The theorist who proposed that moral thought progresses through stages is _____. These stages are divided into three basic levels: _____ , _____ , and _____ .
12. In the preconventional stages of morality, characteristic of children, the emphasis is on obeying rules in order to avoid _____ or gain _____ .
13. Conventional morality usually emerges by early _____. The emphasis is on gaining social _____ or upholding the social _____ .
14. Individuals who base moral judgments on their own perceptions of basic ethical principles are said by Kohlberg to employ _____ morality.

Summarize the criticisms of Kohlberg's theory of moral development.

15. The idea that moral feelings precede moral reasoning is expressed in the _____ explanation of morality. Research studies using _____ support the idea that moral

judgment involves more than merely thinking; it is also gut-level feeling.

- 16. Morality involves doing the right thing, and what we do depends on _____ influences. Today's _____ focus on moral issues and doing the right thing.
- 17. Children who learn to delay _____ become more socially responsible, often engaging in responsible action through _____ learning. They also become more _____ successful and productive.
- 18. Moral ideas grow _____ (stronger/weaker) when acted on.

Objective 21: Identify Erikson's eight stages of psychosocial development and their accompanying issues.

Complete the missing information in the following table of Erikson's stages of psychosocial development.

Group Age	Psychosocial Stage
Infancy	_____
_____	Autonomy vs. shame and doubt
Preschooler	_____
_____	Competence vs. inferiority
Adolescence	_____
_____	Intimacy vs. isolation
Middle adulthood	_____
_____	Integrity vs. despair

Objective 22: Explain how the search for identity affects us during adolescence, and discuss how forming an identity prepares us for intimacy.

- 19. To refine their sense of identity, adolescents in Western cultures experiment with different _____ in different situations. The result may be role _____, which is resolved by forming a self-definition, or _____.

- 20. Cultures that place less value on _____ inform adolescents about who they are, rather than letting them decide on their own. Some adolescents may form a _____ identity in opposition to parents and society.
- 21. During the early to mid-teen years, self-esteem generally _____ (rises/falls/remains stable). During the late teens and twenties, self-esteem generally _____ (rises/falls/remains stable) and identity becomes more _____.
- 22. Erikson saw the formation of identity as a prerequisite for the development of _____ in young adulthood.

Objective 23: Contrast parental and peer influences during adolescence.

- 23. Adolescence is typically a time of increasing influence from one's _____ and decreasing influence from _____.
- 24. Most adolescents report that they _____ (do/do not) get along with their parents.
- 25. When rejected adolescents withdraw, they are vulnerable to _____, low _____, and _____.

Objective 24: Discuss the characteristics of emerging adulthood.

- 26. As a result of increased _____ and weakened _____ bonds, sexual maturity is beginning _____ (earlier/later) than in the past.
- 27. Because the time from 18 to the mid-twenties is increasingly a not-yet-settled phase of life, some psychologists refer to this period as a time of _____.

Adulthood (pp. 175–192)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to pages 127–128 for an explanation: *misconceptions about aging exploded by recent research; stairs get steeper, the print gets smaller, and people seem to mumble more; levies a tax; "Use it or lose it"; myth . . . laid to rest; hold their own; "Pair-bonding is a trademark of the human animal"; test-driving life together; shower one another with affection; Highs become less high.*

1. During adulthood, age _____ (is/is not) a very good predictor of people's traits.
2. The mid-twenties are the peak years for _____, _____, _____, and _____. Because they mature earlier, _____ (women/men) also peak earlier.

Objective 25: Identify the major physical changes that occur in middle adulthood.

3. During early and middle adulthood, physical vigor has less to do with _____ than with a person's _____ and _____ habits.
4. The cessation of the menstrual cycle, known as _____, occurs within a few years of _____. This biological change results from lowered levels of the hormone _____. A woman's experience during this time depends largely on her _____ and _____.
5. Although men experience no equivalent to menopause, they do experience a more gradual decline in _____ count, level of the hormone _____, and speed of erection and ejaculation during later life.

Objective 26: Compare life expectancy in the mid-twentieth and early twenty-first centuries, and discuss changes in sensory abilities and health (including frequency of dementia) in older adults.

6. Worldwide, life expectancy at birth increased from 49 years in 1950 to _____ years and beyond in 2004 in some developed countries. Women outlive men by nearly _____ years worldwide and by _____ years in Canada, the United States, and Australia.
7. According to one evolutionary theory, our bodies age and wear out because once we've completed our _____ task by raising our young, there are no _____ pressures against genes that cause degeneration in later life.
8. With age, the eye's pupil _____ (shrinks/enlarges) and its lens becomes _____ (more/less) transparent. As a result, the amount of light that reaches the retina is _____ (increased/reduced).
9. Although older adults are _____ (more/less) susceptible to life-threatening ailments, they suffer from short-term ailments such as flu _____ (more/less) often than younger adults.
10. Aging _____ (slows/speeds/has no effect on) neural processing and causes a gradual loss of _____.
11. Physical exercise stimulates _____ development, thanks to increased _____ and nutrient flow.
12. The mental erosion that results from progressive damage to the brain is called _____.
13. The irreversible disorder that causes progressive brain deterioration is _____ disease. This disease has been linked to a deterioration of neurons that produce the neurotransmitter _____.

Objective 27: Assess the impact of aging on recall and recognition in adulthood.

14. Studies of developmental changes in learning and memory show that during adulthood there is a decline in the ability to _____ (recall/recognize) new information but not in the ability to _____ (recall/recognize) such information. One factor that influences memory in the elderly is the _____ of material.
15. Adults' _____ memory remains strong when events help trigger recall.
16. Cognitive abilities among 70-year-olds are _____ (less/more) varied than among 20-year-olds.

Objective 28: Summarize the contributions of cross-sectional and longitudinal studies to our understanding of the normal effects of aging on adult intelligence.

17. A research study in which people of various ages are compared with one another is called a _____ study. This kind of study found evidence of intellectual _____ during adulthood.
18. A research study in which the same people are retested over a period of years is called a _____ study. This kind of study found evidence of intellectual _____ during adulthood.

Explain why studies of intellectual decline and aging yielded conflicting results.

19. The accumulation of stored information that comes with education and experience is called _____ intelligence, which tends to _____ with age.
20. The ability to reason abstractly is referred to as _____ intelligence, which tends to _____ with age.

Objective 29: Explain why the path of adult development need not be tightly linked to one's chronological age.

21. Contrary to popular opinion, job and marital dissatisfaction do not surge during the forties, thus suggesting that a midlife _____ need not occur.
22. The term used to refer to the culturally preferred timing for leaving home, getting a job, marrying, and so on is the _____.
23. Today, the timing of such life events is becoming _____ (more/less) predictable. More important than age are _____ and chance encounters.

Objective 30: Discuss the importance of love, marriage, and children in adulthood, and comment on the contribution of one's work to feelings of self-satisfaction.

24. According to Erikson, the two basic tasks of adulthood are achieving _____ and _____. According to Freud, the healthy adult is one who can _____ and _____.
25. Human societies have nearly always included a relatively _____ bond. Marriage bonds are usually lasting when couples marry after age _____ and are _____.

26. Marriages today are _____ (half/twice) as likely to end in divorce as they were in the 1960s. Couples who live together before marrying have a _____ (higher/ lower) divorce rate than those who do not.
27. Of those who divorce, _____ percent eventually remarry. Marriage is a predictor of _____, _____, and _____. Lesbian couples report _____ (greater/less) well-being than those who are alone.
28. As children begin to absorb time and energy, satisfaction with the marriage itself _____ (increases/decreases). This is particularly true among _____ women, who shoulder most of the burden.
29. For most couples, the children's leaving home produces a(n) _____ (increase/decrease) in marital satisfaction.
30. Research studies of women who are or are not employed have found that a woman's satisfaction in life depends on the _____ of her experience in her life's role.

Objective 31: Describe trends in people's life satisfaction across the life span.

31. From early adulthood to midlife, people typically experience a strengthening sense of _____, _____, and _____.
32. According to studies, older people _____ (do/do not) report as much happiness and satisfaction with life as younger people do. In addition, their feelings _____ (do/do not) mellow.
33. As we age, the brain area called the _____ shows _____ (increased/decreased) activity in response to negative events.

Objective 32: Describe the range of reactions to the death of a loved one.

34. Grief over a loved one's death is especially severe when it comes _____.
35. Reactions to a loved one's death _____ (do/do not) vary according to cultural norms. Those who express the strongest grief immediately _____ (do/do not) purge their grief more quickly.
36. Terminally ill and bereaved people _____ (do/do not) go through predictable stages.
37. According to Erikson, the final task of adulthood is to achieve a sense of _____.

Reflections on Two Major Developmental Issues (pp. 193–194)

If you do not know the meaning of any of the following words, phrases, or expressions in the context in which they appear in the text, refer to page 128 for an explanation: *as a giant redwood differs from its seedling; goof-off.*

Objective 33: Summarize current views on continuity versus stages and stability versus change in lifelong development.

- Stage theories that have been considered include the theory of cognitive development proposed by _____, the theory of moral development proposed by _____, and the theory of psychosocial development proposed by _____.
- Although research casts doubt on the idea that life proceeds through age-linked _____, there are spurts of _____ growth during childhood and puberty that correspond roughly to the stages proposed by _____.
- The first two years of life _____ (do/do not) provide a good basis for predicting a person's eventual traits.

4. Research on the consistency of personality shows that some traits, such as those related to _____, are more stable than others, such as social attitudes.

PROGRESS TEST 1

Circle your answers to the following questions and check them with the answers beginning on page 118. If your answer is incorrect, read the explanation for why it is incorrect and then consult the appropriate pages of the text (in parentheses following the correct answer).

Multiple-Choice Questions

- Dr. Joan Goodman is studying how memory changes as people get older. She is most likely a(n) _____ psychologist.
 - social
 - cognitive
 - developmental
 - experimental
- In Piaget's stage of concrete operational intelligence, the child acquires an understanding of the principle of:
 - conservation.
 - deduction.
 - attachment.
 - object permanence.
- Piaget held that egocentrism is characteristic of the:
 - sensorimotor stage.
 - preoperational stage.
 - concrete operational stage.
 - formal operational stage.
- During which stage of cognitive development do children acquire object permanence?
 - sensorimotor
 - preoperational
 - concrete operational
 - formal operational
- The rooting reflex occurs when a:
 - newborn's foot is tickled.
 - newborn's cheek is touched.
 - newborn hears a loud noise.
 - newborn makes eye contact with his or her caregiver.
- Harlow's studies of attachment in monkeys showed that:
 - provision of nourishment was the single most important factor motivating attachment.
 - a cloth mother produced the greatest attachment response.
 - whether a cloth or wire mother was present mattered less than the presence or absence of other infants.
 - attachment in monkeys is based on imprinting.
- When psychologists discuss maturation, they are referring to stages of growth that are *not* influenced by:
 - conservation.
 - nature.
 - nurture.
 - continuity.
- The developmental theorist who suggested that securely attached children develop an attitude of basic trust is:
 - Piaget.
 - Harlow.
 - Vygotsky.
 - Erikson.
- Research findings on infant motor development are consistent with the idea that:
 - cognitive development lags significantly behind motor skills development.
 - maturational of physical skills is relatively unaffected by experience.
 - in the absence of relevant earlier learning experiences, the emergence of motor skills will be slowed.
 - in humans, the process of maturation may be significantly altered by cultural factors.
- According to Erikson, the central psychological challenges pertaining to adolescence, young adulthood, and middle age, respectively, are:
 - identity formation; intimacy; generativity.
 - intimacy; identity formation; generativity.
 - generativity; intimacy; identity formation.
 - intimacy; generativity; identity formation.
- In preconventional morality, the person:
 - obeys out of a sense of social duty.
 - conforms to gain social approval.
 - obeys to avoid punishment or to gain concrete rewards.
 - follows the dictates of his or her conscience.
- Which of the following is correct?
 - Early maturation places both boys and girls at a distinct social advantage.
 - Early maturing girls are more popular and self-assured than girls who mature late.
 - Early maturation places both boys and girls at a distinct social disadvantage.
 - Early maturing boys are more popular and self-assured than boys who mature late.

13. A person's general ability to think abstractly is called _____ intelligence. This ability generally _____ with age.
- fluid; increases
 - fluid; decreases
 - crystallized; decreases
 - crystallized; increases
14. Among the hallmarks of growing up are a boy's first ejaculation and a girl's first menstrual period, which also is called:
- puberty.
 - menopause.
 - menarche.
 - generativity.
15. An elderly person who can look back on life with satisfaction and reminisce with a sense of completion has attained Erikson's stage of:
- generativity.
 - intimacy.
 - isolation.
 - integrity.
16. According to Piaget, the ability to think logically about abstract propositions is indicative of the stage of:
- preoperational thought.
 - concrete operations.
 - formal operations.
 - fluid intelligence.
17. The cognitive ability that has been shown to decline during adulthood is the ability to:
- recall new information.
 - recognize new information.
 - learn meaningful new material.
 - use judgment in dealing with daily life problems.
18. Which of the following statements concerning the effects of aging is true?
- Aging almost inevitably leads to dementia if the individual lives long enough.
 - Aging increases susceptibility to short-term ailments such as the flu.
 - Significant increases in life satisfaction are associated with aging.
 - The aging process can be significantly affected by the individual's activity patterns.
19. Longitudinal tests:
- compare people of different ages.
 - study the same people at different times.
 - usually involve a larger sample than do cross-sectional tests.
 - usually involve a smaller sample than do cross-sectional tests.
20. The average age at which puberty begins is _____ in boys; in girls, it is _____.
- 14; 13
 - 13; 11
 - 11; 10
 - 10; 9
21. After puberty, the self-concept usually becomes:
- more positive in boys.
 - more positive in girls.
 - more positive in both boys and girls.
 - more negative in both boys and girls.
22. Adolescence is marked by the onset of:
- an identity crisis.
 - parent-child conflict.
 - the concrete operational stage.
 - puberty.
23. Of the following, which is a possible cause of dementia?
- stroke
 - brain tumor
 - alcoholism
 - All of the above are possible causes.
24. The end of menstruation is called:
- menarche.
 - menopause.
 - the midlife crisis.
 - generativity.
25. The popular idea that terminally ill and bereaved people go through predictable stages, such as denial, anger, and so forth:
- is widely supported by research.
 - more accurately describes grieving in some cultures than others.
 - is true of women but not men.
 - is not supported by research studies.

True-False Items

Indicate whether each statement is true or false by placing *T* or *F* in the blank next to the item.

- _____ 1. Most abused children later become abusive parents.
- _____ 2. At birth, the brain and nervous system of a healthy child are fully developed.
- _____ 3. The sequence in which children develop motor skills varies from one culture to another.
- _____ 4. Recent research shows that young children are more capable and development is more continuous than Piaget believed.

- _____ 5. The process of grieving is much the same throughout the world.
- _____ 6. The impact of day care on child development, even if it is high quality, remains controversial.
- _____ 7. During adulthood, age only moderately correlates with people's traits.
- _____ 8. Intelligence declines throughout adulthood.
- _____ 9. By the age of 50, most adults have experienced a "midlife crisis."
- _____ 10. Compared to those who are younger, elderly people are more susceptible to short-term ailments such as flu and cold viruses.
- _____ 11. The symptoms of Alzheimer's disease are simply an intensified version of normal aging.
4. A child can be born a drug addict because:
- drugs used by the mother will pass into the child's bloodstream.
 - addiction is an inherited personality trait.
 - drugs used by the mother create genetic defects in her chromosomes.
 - the fetus' blood has not yet developed a resistance to drugs.
5. A child whose mother drank heavily when she was pregnant is at heightened risk of:
- being emotionally excitable during childhood.
 - becoming insecurely attached.
 - being born with the physical and cognitive abnormalities of fetal alcohol syndrome.
 - addiction to a range of drugs throughout life.
6. Which is the correct order of stages of prenatal development?
- zygote, fetus, embryo
 - zygote, embryo, fetus
 - embryo, zygote, fetus
 - embryo, fetus, zygote
7. The term *critical period* refers to:
- prenatal development.
 - the initial 2 hours after a child's birth.
 - the preoperational stage.
 - a restricted time for learning.
8. Which of the following was *not* found by Harlow in socially deprived monkeys?
- They had difficulty mating.
 - They showed extreme fear or aggression when first seeing other monkeys.
 - They showed abnormal physical development.
 - The females were abusive mothers.
9. Most people's earliest memories do not predate _____ of age.
- | | |
|-------------|------------|
| a. 6 months | c. 2 years |
| b. 1 year | d. 4 years |
10. Insecurely attached infants who are left by their mothers in an unfamiliar setting often will:
- hold fast to their mothers on their return.
 - explore the new surroundings confidently.
 - be indifferent toward their mothers on their return.
 - display little emotion at any time.

PROGRESS TEST 2

Progress Test 2 should be completed during a final chapter review. Answer the following questions after you thoroughly understand the correct answers for the section reviews and Progress Test 1.

- Stranger anxiety develops soon after:
 - the concept of conservation.
 - egocentrism.
 - a theory of mind.
 - the concept of object permanence.
- Before Piaget, people were more likely to believe that:
 - the child's mind is a miniature model of the adult's.
 - children think about the world in radically different ways from adults.
 - the child's mind develops through a series of stages.
 - children interpret their experiences in terms of their current understandings.
- Which is the correct sequence of stages in Piaget's theory of cognitive development?
 - sensorimotor, preoperational, concrete operational, formal operational
 - sensorimotor, preoperational, formal operational, concrete operational
 - preoperational, sensorimotor, concrete operational, formal operational
 - preoperational, sensorimotor, formal operational, concrete operational

11. Whose stage theory of moral development was based on how people reasoned about ethical dilemmas?
- Erikson
 - Piaget
 - Harlow
 - Kohlberg
12. The cross-sectional method:
- compares people of different ages with one another.
 - studies the same group of people at different times.
 - tends to paint too favorable a picture of the effects of aging on intelligence.
 - is more appropriate than the longitudinal method for studying intellectual change over the life span.
13. The social clock refers to:
- an individual or society's distribution of work and leisure time.
 - adulthood responsibilities.
 - typical ages for starting a career, marrying, and so on.
 - age-related changes in one's circle of friends.
14. To which of Kohlberg's levels would moral reasoning based on the existence of fundamental human rights pertain?
- preconventional morality
 - conventional morality
 - postconventional morality
 - generative morality
15. In Erikson's theory, individuals generally focus on developing _____ during adolescence and then _____ during young adulthood.
- identity; intimacy
 - intimacy; identity
 - basic trust; identity
 - identity; basic trust
16. After menopause, most women:
- experience anxiety and a sense of worthlessness.
 - experience hot flashes.
 - secrete unusually high levels of estrogen.
 - feel a new sense of freedom.
17. Notable achievements in fields such as _____ are often made by younger adults in their late twenties or early thirties, when _____ intelligence is at its peak.
- mathematics; fluid
 - philosophy; fluid
 - science; crystallized
 - literature; crystallized
18. After their grown children have left home, most couples experience:
- the distress of the "empty nest syndrome."
 - increased strain in their marital relationship.
 - both a. and b.
 - greater happiness and enjoyment in their relationship.
19. Underlying Alzheimer's disease is a deterioration in neurons that produce:
- epinephrine.
 - norepinephrine.
 - serotonin.
 - acetylcholine.
20. A person's accumulation of stored information, called _____ intelligence, generally _____ with age.
- fluid; decreases
 - fluid; increases
 - crystallized; decreases
 - crystallized; increases
21. In terms of incidence, susceptibility to short-term illnesses _____ with age and susceptibility to long-term ailments _____ with age.
- decreases; increases
 - increases; decreases
 - increases; increases
 - decreases; decreases
22. Stage theories have been criticized because they fail to consider that development may be significantly affected by:
- variations in the social clock.
 - each individual's experiences.
 - each individual's historical and cultural setting.
 - all of the above.
23. Research on the American family indicates that:
- fewer than 23 percent of unmarried adults, but nearly 40 percent of married adults, report being "very happy" with life.
 - the divorce rate is now one-half the marriage rate.
 - of those who divorce, 75 percent remarry.
 - all of the above are true.

PSYCHOLOGY APPLIED

Answer these questions the day before an exam as a final check on your understanding of the chapter's terms and concepts.

Multiple-Choice Questions

- Compared to when he was younger, 4-year-old Antonio is better able to empathize with his friend's feelings. This growing ability to take another's perspective indicates that Antonio is acquiring a:
 - self-concept.
 - schema.
 - temperament.
 - theory of mind.
- Calvin, who is trying to impress his psychology professor with his knowledge of infant motor development, asks why some infants learn to roll over before they lift their heads from a prone position, while others develop these skills in the opposite order. What should Calvin's professor conclude from this question?
 - Calvin clearly understands that the sequence of motor development is not the same for all infants.
 - Calvin doesn't know what he's talking about. Although some infants reach these developmental milestones ahead of others, the order is the same for all infants.
 - Calvin needs to be reminded that rolling over is an inherited reflex, not a learned skill.
 - Calvin understands an important principle: motor development is unpredictable.
- Deborah is a mathematician and Willie is a philosopher. Considering their professions:
 - Deborah will make her most significant career accomplishments at an earlier age than Willie will.
 - Deborah will make her most significant career accomplishments at a later age than Willie will.
 - Deborah will make her most significant career accomplishments at about the same time as Willie.
 - there is still not enough information for predicting such accomplishments.
- Based on the text discussion of maturation and popularity, who among the following is probably the most popular sixth grader?
 - Jessica, the most physically mature girl in the class
 - Roger, the most intellectually mature boy in the class
 - Rob, the tallest, most physically mature boy in the class
 - Cindy, who is average in physical development and is on the school debating team
- As a child observes, liquid is transferred from a tall, thin tube into a short, wide jar. The child is asked if there is now less liquid in order to determine if she has mastered:
 - the schema for liquids.
 - the concept of object permanence.
 - the concept of conservation.
 - the ability to reason abstractly.
- I am 14 months old and fearful of strangers. I am in Piaget's _____ stage of cognitive development.
 - sensorimotor
 - preoperational
 - concrete operational
 - formal operational
- I am 3 years old, can use language, and have trouble taking another person's perspective. I am in Piaget's _____ stage of cognitive development.
 - sensorimotor
 - preoperational
 - concrete operational
 - formal operational
- In Piaget's theory, conservation is to egocentrism as the _____ stage is to the _____ stage.
 - sensorimotor; formal operational
 - formal operational; sensorimotor
 - preoperational; sensorimotor
 - concrete operational; preoperational
- Four-year-old Jamail has a younger sister. When asked if he has a sister, he is likely to answer _____; when asked if his sister has a brother, Jamail is likely to answer _____.
 - yes; yes
 - no; no
 - yes; no
 - no; yes
- In a 1998 movie, a young girl finds that a gaggle of geese follow her wherever she goes because she was the first "object" they saw after they were born. This is an example of:
 - conservation.
 - imprinting.
 - egocentrism.
 - basic trust.
- Joshua and Ann Bishop have a 13-month-old boy. According to Erikson, the Bishops' sensitive, loving care of their child contributes to:
 - the child's sense of basic trust.
 - the child's secure attachment.
 - the child's sense of control.
 - a. and b. only.
- Fourteen-year-old Cassandra feels freer and more open with her friends than with her family.

- Knowing this is the case, Cassandra's parents should:
- be concerned, because deteriorating parent-teen relationships, such as this one, are often followed by a range of problem behaviors.
 - encourage Cassandra to find new friends.
 - seek family counseling.
 - not worry, since adolescence is typically a time of growing peer influence and diminishing parental influence.
- Thirteen-year-old Irene has no trouble defeating her 11-year-old brother at a detective game that requires following clues in order to deduce the perpetrator of a crime. How might Piaget explain Irene's superiority at the game?
 - Being older, Irene has had more years of schooling.
 - Girls develop intellectually at a faster rate than boys.
 - Being an adolescent, Irene is beginning to develop abstract reasoning skills.
 - Girls typically have more experience than boys at playing games.
 - Which of the following was *not* mentioned in the text as a criticism of Kohlberg's theory of moral development?
 - It does not account for the fact that the development of moral reasoning is culture-specific.
 - Postconventional morality appears mostly in educated, middle-class persons.
 - The theory is biased against the moral reasoning of people in communal societies such as China.
 - The theory is biased in favor of moral reasoning in men.
 - Sixty-five-year-old Calvin cannot reason as well as he could when he was younger. More than likely, Calvin's _____ intelligence has declined.

a. analytic	c. fluid
b. crystallized	d. both b. and c.
 - Cross-sectional studies of intelligence are potentially misleading because:
 - they are typically based on a very small and unrepresentative sample of people.
 - retesting the same people over a period of years allows test performance to be influenced by practice.
 - they compare people who are not only different in age, but of different eras, education levels, and affluence.
 - of all the above reasons.
 - Which statement illustrates cognitive development during the course of adult life?
 - Adults in their forties have better recognition memory than do adults in their seventies.
 - Recall and recognition memory both remain strong throughout life.
 - Recognition memory decreases sharply at midlife.
 - Adults in their forties have better recall memory than adults in their seventies.
 - Given the text discussion of life satisfaction patterns, which of the following people is likely to report the greatest life satisfaction?
 - Billy, a 7-year-old second-grader
 - Kathy, a 17-year-old high-school senior
 - Mildred, a 70-year-old retired teacher
 - too little information to tell
 - Which of the following statements is consistent with the current thinking of developmental psychologists?
 - Development occurs in a series of sharply defined stages.
 - The first two years are the most crucial in determining the individual's personality.
 - The consistency of personality in most people tends to increase over the life span.
 - Social and emotional style are among the characteristics that show the least stability over the life span.
 - Sam, a junior in high school, regularly attends church because his family and friends think he should. Which stage of moral reasoning is Sam in?
 - preconventional
 - conventional
 - postconventional
 - too little information to tell
 - Research on social relationships between parents and their adolescent children shows that:
 - parental influence on children increases during adolescence.
 - high school girls who have the most affectionate relationships with their mothers tend to enjoy the most intimate friendships with girlfriends.
 - high school boys who have the most affectionate relationships with their fathers tend to enjoy the most intimate friendships with friends.
 - most teens are strongly influenced by parents in matters of personal taste.

22. Most contemporary developmental psychologists believe that:
- personality is essentially formed by the end of infancy.
 - personality continues to be formed until adolescence.
 - the shaping of personality continues during adolescence and well beyond.
 - adolescent development has very little impact on adult personality.
23. After a series of unfulfilling relationships, 30-year-old Carlos tells a friend that he doesn't want to marry because he is afraid of losing his freedom and independence. Erikson would say that Carlos is having difficulty with the psychosocial task of:
- trust versus mistrust.
 - autonomy versus doubt.
 - intimacy versus isolation.
 - identity versus role confusion.
24. Research on the relationship between self-reported happiness and employment in American women has revealed that:
- women who work tend to be happier.
 - women who do not work tend to be happier.
 - women today are happier than in the past, whether they are working or not.
 - the quality of a woman's experience in her various roles is more predictive of happiness than the presence or absence of a given role.

Essay Question

Sheryl is 12 years old and in the sixth grade. Describe the developmental changes she is likely to be experiencing according to Piaget, Kohlberg, and Erikson. (Use the space below to list the points you want to make, and organize them. Then write the essay on a separate sheet of paper.)

KEY TERMS

Using your own words, on a piece of paper write a brief definition or explanation of each of the following terms.

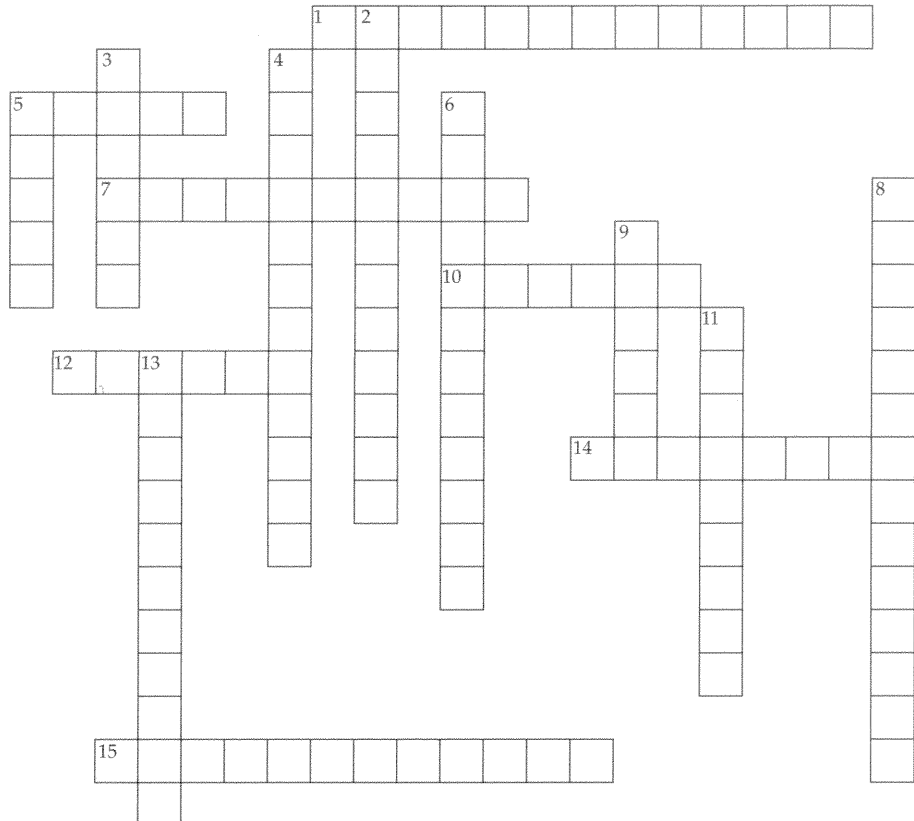
- developmental psychology
- zygote
- embryo
- fetus
- teratogens
- fetal alcohol syndrome (FAS)
- rooting reflex
- habituation
- maturation
- schema
- assimilation
- accommodation
- cognition
- sensorimotor stage
- object permanence
- preoperational stage
- conservation
- egocentrism
- theory of mind
- autism
- concrete operational stage
- formal operational stage
- stranger anxiety
- attachment
- critical period
- imprinting
- basic trust
- self-concept
- adolescence
- puberty
- primary sex characteristics
- secondary sex characteristics
- menarche
- identity
- intimacy
- menopause
- Alzheimer's disease

- 38. cross-sectional study
- 39. longitudinal study
- 40. crystallized intelligence

- 41. fluid intelligence
- 42. social clock

Cross-Check

As you learned in the Prologue, reviewing and overlearning of material are important to the learning process. After you have written the definitions of the key terms in this chapter, you should complete the crossword puzzle to ensure that you can reverse the process—recognize the term, given the definition.



ACROSS

- 1. In Piaget’s theory, changing an existing schema to incorporate new information.
- 5. Type of intelligence that relates to reasoning speedily and abstractly.
- 7. Process by which certain animals form attachments during a critical period.
- 10. The developing person from 2 weeks through 2 months after conception.
- 12. Mental concepts or frameworks that organize information.
- 14. The first menstrual period.
- 15. A study in which the same people are retested over a period of years.

Down

- 2. Type of intelligence that reflects accumulated learning.
- 3. A childhood disorder marked by deficiencies in communication and social interaction.
- 4. In Piaget’s theory, interpreting a new experience in terms of an existing schema.
- 5. The developing person from 9 weeks after conception until birth.
- 6. Principle that properties such as number and volume remain constant despite changes in appearance.
- 8. A study in which people of different ages are compared with one another.
- 9. Fertilized human egg.
- 11. Any drug, virus, or other toxic substance that crosses the mother’s placenta.
- 13. Decreasing responsiveness to a stimulus that is repeatedly presented

ANSWERS

Chapter Review

Introduction

- 1. developmental psychologists
- 2. nature/nurture
- 3. continuity/stages
- 4. stability

Prenatal Development and the Newborn

- 1. ovary; egg
- 2. sperm; enzymes; blocks
- 3. nuclei
- 4. zygotes; differentiate; uterine; placenta
- 5. embryo; fetus
- 6. teratogens
- 7. can affect; fetal alcohol syndrome
- 8. rooting reflex
- 9. William James; incorrect

Newborns reflexively turn their heads in the direction of human voices. They gaze longer at a drawing of a human face than at a bull's-eye pattern. They focus best on objects about 8 to 12 inches away, which is about the distance between a nursing infant's eyes and the mother's. Within days, they recognize their mother's smell and voice.

10. habituation; decrease; colors, shapes, sounds; numbers; physics

Infancy and Childhood

1. over; 28 weeks; is not
2. frontal; rational planning
3. pruning
4. maturation
5. motor; sequence; crawl; run
6. major
7. cerebellum; small
8. 3
9. infantile amnesia
10. preverbal; language
11. Piaget
12. schemas
13. assimilation; accommodation
14. cognition
15. sensorimotor; 2
16. object permanence; 8
17. underestimated; numbers
18. 6 or 7; preoperational
19. conservation; have not
20. egocentrism
21. theory of mind; false beliefs; feelings
22. communication; social; theory of mind; autism; attending; Asperger syndrome
23. male; empathizers; systemizers
24. operations; symbolically; perspective; gradually
25. Lev Vygotsky; 7; inner speech; scaffold
26. 6 or 7; concrete operational
27. formal operational; abstract; 12

Contemporary researchers see development as more continuous than did Piaget. By detecting the beginnings of each type of thinking at earlier ages, they have revealed conceptual abilities that Piaget missed. They also see formal logic as a smaller part of cognition than Piaget did. Despite these revisions to Piaget's theory, studies support the basic idea that cognitive development unfolds as a sequence of distinct stages.

28. object permanence; stranger anxiety
29. 8 months
30. attachment
31. body contact; familiarity
32. safe haven; secure base
33. critical period; imprinting
34. do not
35. strange situation; secure; insecure

Placed in a strange situation, securely attached infants play comfortably, happily exploring their new environment. In contrast, insecurely attached infants are less likely to explore their surroundings and may even cling to their mothers. When separated from their mothers, insecurely attached infants are much more distressed than securely attached infants. When reunited with their mothers, insecurely attached infants may be indifferent.

Research studies conducted by Mary Ainsworth have revealed that sensitive, responsive mothers tend to have securely attached infants, whereas insensitive, unresponsive mothers often have insecurely attached infants. Other studies have found that temperamentally difficult infants whose mothers receive training in responsive parenting are more likely to become securely attached than are control infants. This points to the importance of considering the infant's temperament in studying attachment.

36. comparable to
37. 13; gradually declines; throughout the world
38. basic trust
39. aggression
40. do not
41. resilient; stress hormones; serotonin
42. recover
43. does not; safe; healthy; stimulating; the mother's sensitivity, the child's temperament, and the family's economic and educational level
44. self-concept; 12
45. 8; 10; traits

Children who have formed a positive self-concept tend to be more confident, independent, optimistic, assertive, and sociable.

46. authoritarian
47. permissive
48. authoritative
49. authoritative; control

There are at least three possible explanations for the correlation between authoritative parenting and social competence in children. (1) Parenting may fos-

ter children's competence. (2) Children's competence may promote authoritative parenting. (3) A third factor, such as heredity or parental education or socioeconomic status, may foster both authoritative parenting and child competence.

Adolescence

1. childhood; adulthood
2. G. Stanley Hall
3. puberty; 11; 13; primary sex; secondary sex
4. menarche; spermatarche
5. sequence; timing
6. early; alcohol use and premature sexual activity; early; emotional maturity; heredity; environment
7. pruning; frontal lobe; limbic system
8. social; moral
9. self-focused
10. formal operations; abstract; inconsistencies
11. Kohlberg; preconventional; conventional; postconventional
12. punishment; rewards
13. adolescence; approval; order
14. postconventional

Critics of Kohlberg's theory argue that the perception of postconventional moral reasoning as the highest level of moral development reflects a Western middle-class bias. Others have argued that for women, morality is less a matter of abstract, impersonal justice and more an ethic of caring relationships.

15. social intuitionist; moral paradoxes
16. social; character education programs
17. gratification; service; academically
18. stronger

Erikson's stages of psychosocial development

Group Age	Psychosocial Stage
Infancy	Trust vs. mistrust
Toddlerhood	Autonomy vs. shame and doubt
\Preschooler	Initiative vs. guilt
Elementary school	Competence vs. inferiority
Adolescence	Identity vs. role confusion
Young adulthood	Intimacy vs. isolation
Middle adulthood	Generativity vs. stagnation
Late adulthood	Integrity vs. despair

19. selves; confusion; identity
20. individualism; negative
21. falls; rises; personalized
22. intimacy
23. peers; parents
24. do
25. loneliness; self-esteem; depression
26. body fat; parent-child; earlier
27. emerging adulthood

Adulthood

1. is not
2. muscular strength, reaction time, sensory keenness, cardiac output; women
3. age; health; exercise
4. menopause; 50; estrogen; expectations; attitude
5. sperm; testosterone
6. 75; 4; 5 to 6
7. gene-reproducing; natural selection
8. shrinks; less; reduced
9. more; less
10. slows; brain cells
11. brain cell; oxygen
12. dementia
13. Alzheimer's; acetylcholine
14. recall; recognize; meaningfulness
15. prospective
16. more
17. cross-sectional; decline
18. longitudinal; stability

Because cross-sectional studies compare people not only of different ages but also of different eras, education levels, family size, and affluence, it is not surprising that such studies reveal cognitive decline with age. In contrast, longitudinal studies test one group over a span of years. However, because those who survive to the end of longitudinal studies may be the brightest and healthiest, these studies may underestimate the average decline in intelligence. Research is also complicated by the fact that certain tests measure only one type of intelligence. Tests that measure fluid intelligence reveal decline with age; tests that measure crystallized intelligence reveal just the opposite.

19. crystallized; increase
20. fluid; decrease
21. transition (crisis)
22. social clock

23. less; life events
24. intimacy; generativity; love; work
25. monogamous; 20; well educated
26. twice; higher
27. 75; happiness; sexual satisfaction; health; income; greater
28. decreases; employed
29. increase
30. quality
31. identity; confidence; self-esteem
32. do; do
33. amygdala; decreased
34. suddenly and before its expected time on the social clock
35. do; do not
36. do not
37. integrity

Reflections on the Two Major Developmental Issues

1. Piaget; Kohlberg; Erikson
2. stages; brain; Piaget
3. do not
4. temperament

Progress Test 1

Multiple-Choice Questions

1. c. is the answer. Developmental psychologists study physical, cognitive (memory, in this example), and social change throughout the life span. (p. 139)
 - a. Social psychologists study how people influence and are influenced by others.
 - b. Cognitive psychologists *do* study memory; because Dr. Goodman is interested in life-span *changes* in memory, she is more likely a developmental psychologist.
 - d. Experimental psychologists study physiology, sensation, perception, learning, and other aspects of behavior. Only developmental psychologists focus on developmental changes in behavior and mental processes.
2. a. is the answer. (p. 153)
 - b. Deduction, or deductive reasoning, is a formal operational ability.
 - c. Piaget's theory is not concerned with attachment.
 - d. Attaining object permanence is the hallmark of sensorimotor thought.
3. b. is the answer. The preoperational child sees the

world from his or her own vantage point. (p. 150)
 a. As immature as egocentrism is, it represents a significant cognitive advance over the sensorimotor child, who knows the world only through senses and actions. Even simple self-awareness takes a while to develop.

c. & d. As children attain the operational stages, they become more able to see the world through the eyes of others.

4. a. is the answer. Before object permanence is attained, "out of sight" is truly "out of mind." (p. 149)

b., c., & d. Developments during the preoperational, concrete operational, and formal operational stages include the use of language, conservation, and abstract reasoning, respectively.

5. b. is the answer. The infant turns its head and begins sucking when its cheek is stroked. (p. 142)

a., c., & d. These stimuli produce other reflexes in the newborn.

6. b. is the answer. (p. 155)

a. When given the choice between a wire mother with a bottle and a cloth mother without, the monkeys preferred the cloth mother.

c. The presence of other infants made no difference.

d. Imprinting plays no role in the attachment of higher primates.

7. c. is the answer. Through maturation—an orderly sequence of biological growth processes that are relatively unaffected by experience—all humans develop. (p. 145)

a. Conservation is the cognitive awareness that objects do not change with changes in shape.

b. The forces of nature *are* those that direct maturation.

d. The continuity/stages debate has to do with whether development is a gradual and continuous process or a discontinuous, stagelike process. Those who emphasize maturation see development as occurring in stages, not continuously.

8. d. is the answer. Erikson proposed that development occurs in a series of stages, in the first of which the child develops an attitude of either basic trust or mistrust. (p. 158)

a. Piaget's theory is concerned with cognitive development.

b. Harlow conducted research on attachment and deprivation.

c. Vygotsky focused on the influence of social factors on cognitive development.

9. b. is the answer. (pp. 145–146)

10. **a.** is the answer. (p. 170)
11. **c.** is the answer. At the preconventional level, moral reasoning centers on self-interest, whether this means obtaining rewards or avoiding punishment. (p. 168)
a. & b. Moral reasoning based on a sense of social duty or a desire to gain social approval is associated with the conventional level of moral development.
d. Reasoning based on ethical principles is characteristic of the postconventional level of moral development.
12. **d.** is the answer. Boys who show early physical maturation are generally stronger and more athletic than boys who mature late; these qualities may lead to greater popularity and self-assurance. (p. 166)
a. & c. Early maturation tends to be socially advantageous for boys but not for girls.
b. Early-maturing girls often suffer embarrassment and are objects of teasing.
13. **b.** is the answer. (p. 184)
a. Fluid intelligence tends to decrease with age.
c. & d. Crystallized intelligence refers to the accumulation of facts and general knowledge that takes place during a person's life. Crystallized intelligence generally *increases* with age.
14. **c.** is the answer. (p. 166)
a. Puberty refers to the early adolescent period during which accelerated growth and sexual maturation occur, not to the first menstrual period.
b. Menopause is the cessation of menstruation, which typically occurs in the early fifties.
d. In Erikson's theory, generativity, or the sense of contributing and being productive, is the task of middle adulthood.
15. **d.** is the answer. (p. 191)
a. Generativity is associated with middle adulthood.
b. & c. Intimacy and isolation are associated with young adulthood.
16. **c.** is the answer. Once formal operational thought has been attained, thinking is no longer limited to concrete propositions. (p. 154)
a. & b. Preoperational thought and concrete operational thought emerge before, and do not include, the ability to think logically about abstract propositions.
d. Fluid intelligence refers to abstract reasoning abilities; however, it is unrelated to Piaget's theory and stages.
17. **a.** is the answer. (pp. 181–182)
b., c., & d. These cognitive abilities remain essentially unchanged as the person ages.
18. **d.** is the answer. "Use it or lose it" seems to be the rule: often, changes in activity patterns contribute significantly to problems regarded as being part of usual aging. (pp. 175–176)
a. Most elderly people do not develop dementia; even among the very old, the risk of dementia is only 40 percent.
b. Although the elderly are more subject to long-term ailments than younger adults, they actually suffer fewer short-term ailments.
c. People of all ages report equal happiness or satisfaction with life.
19. **b.** is the answer. (p. 183)
a. This answer describes cross-sectional research.
c. & d. Sample size does not distinguish cross-sectional from longitudinal research.
20. **b.** is the answer. (p. 165)
21. **c.** is the answer. Because the late teen years provide many new opportunities for trying out possible roles, adolescents' identities typically incorporate an increasingly positive self-concept. (p. 171)
22. **d.** is the answer. The physical changes of puberty mark the onset of adolescence. (p. 165)
a. & b. An identity crisis or parent-child conflict may or may not occur during adolescence; neither of these formally marks its onset.
c. Formal operational thought, rather than concrete reasoning, typically develops in adolescence.
23. **d.** is the answer. (p. 180)
24. **b.** is the answer. (p. 176)
a. Menarche refers to the onset of menstruation.
c. When it does occur, the midlife crisis is a psychological, rather than biological, phenomenon.
d. Generativity is Erikson's term for productivity during middle adulthood.
25. **d.** is the answer. (p. 191)

True-False Items

- | | | |
|---------------|---------------|-----------------|
| 1. F (p. 158) | 5. F (p. 191) | 9. F (p. 186) |
| 2. F (p. 144) | 6. F (p. 160) | 10. F (p. 179) |
| 3. F (p. 145) | 7. T (p. 186) | 11. F (pp. 180) |
| 4. T (p. 154) | 8. F (p. 184) | |

Progress Test 2

1. **d.** is the answer. With object permanence, a child develops schemas for familiar objects, including faces, and may become upset by a stranger who does not fit any of these schemas. (p. 155)

- a. The concept of conservation develops during the concrete operational stage, whereas stranger anxiety develops during the sensorimotor stage.
- b. & c. Egocentrism and a theory of mind both develop during the preoperational stage. This follows the sensorimotor stage, during which stranger anxiety develops.
2. a. is the answer. (p. 147)
- b., c., & d. Each of these is an understanding developed by Piaget.
3. a. is the answer. (p. 148)
4. a. is the answer. Any drug taken by the mother passes through the placenta and enters the child's bloodstream. (p. 141)
- b. Addiction cannot be inherited; it requires exposure to an addictive drug.
- c. Drugs may disrupt the mechanisms of heredity, but there is no evidence that such changes promote addiction.
- d. This answer is incorrect because at no age does the blood "resist" drugs.
5. c. is the answer. (p. 142)
- a., b., & d. A child's emotional temperament, attachment, and addiction have not been linked to the mother's drinking while pregnant.
6. b. is the answer. (pp. 140–141)
7. d. is the answer. A critical period is a restricted time during which an organism must be exposed to certain influences or experiences for a particular kind of learning to occur. (p. 156)
- a. Critical periods refer to developmental periods after birth.
- b. Critical periods vary from behavior to behavior, but they are not confined to the hours following birth.
- c. Critical periods are not specifically associated with the preoperational period.
8. c. is the answer. Deprived monkeys were impaired in their social behaviors but not in their physical development. (p. 158)
- a., b., & d. Each of these was found in socially deprived monkeys.
9. d. is the answer. This is because of a lack of neural connections before that age. (p. 146)
10. c. is the answer. (p. 156)
- a. Insecurely attached infants often cling to their mothers when placed in a new situation; yet, when the mother returns after an absence, the infant's reaction tends to be one of indifference.
- b. These behaviors are characteristic of securely attached infants.
- d. Insecurely attached infants in unfamiliar surroundings will often exhibit a range of emotional behaviors.
11. d. is the answer. (p. 168)
- a. Erikson is known for his theory of psychosocial development.
- b. Piaget is known for his theory of cognitive development.
- c. Harlow is known for his studies of attachment in infant monkeys.
12. a. is the answer. (p. 183)
- b. This answer describes the longitudinal research method.
- c. & d. Cross-sectional studies have tended to exaggerate the negative effects of aging on intellectual functioning; for this reason they may not be the most appropriate method for studying life-span development.
13. c. is the answer. Different societies and eras have somewhat different ideas about the age at which major life events should ideally occur. (p. 187)
14. c. is the answer. (p. 168)
- a. Preconventional morality is based on avoiding punishment and obtaining rewards.
- b. Conventional morality is based on gaining the approval of others and/or on following the law and social convention.
- d. There is no such thing as generative morality.
15. a. is the answer. (p. 170)
- b. According to Erikson, identity develops before intimacy.
- c. & d. The formation of basic trust is the task of infancy.
16. d. is the answer. (p. 176)
- a. Most women do not experience anxiety and distress following menopause; moreover, the woman's experience will depend largely on her expectations and attitude.
- b. Only 4 or 5 in 10 postmenopausal Canadian and U.S. women and 1 in 7 postmenopausal Japanese women experience hot flashes.
- c. Menopause is caused by a *reduction* in estrogen.
17. a. is the answer. A mathematician's skills are likely to reflect abstract reasoning, or fluid intelligence, which declines with age. (p. 185)
- b. & d. Philosophy and literature are fields in which individuals often do their most notable work later in life, after more experiential knowledge (crystallized intelligence) has accumulated.
- c. Scientific achievements generally reflect fluid, rather than crystallized, intelligence.
18. d. is the answer. (p. 188)
- a., b., & c. Most couples do not feel a loss of pur-

pose or marital strain following the departure of grown children.

19. **d.** is the answer. Significantly, drugs that block the activity of the neurotransmitter acetylcholine produce Alzheimer's-like symptoms. (p. 180)
 - a. & b.** Epinephrine and norepinephrine are hormones produced by glands of the endocrine system.
 - c.** Serotonin is a neurotransmitter and hence is produced by neurons, but it has not been implicated in Alzheimer's disease.
20. **d.** is the answer. (p. 184)
 - a. & b.** Fluid intelligence, which decreases with age, refers to the ability to reason abstractly.
 - c.** Crystallized intelligence increases with age.
21. **a.** is the answer. (p. 179)
22. **d.** is the answer. (pp. 185–186)
23. **d.** is the answer. (p. 187)

Psychology Applied

Multiple-Choice Questions

1. **d.** is the answer. (p. 151)
2. **b.** is the answer. (p. 145)
 - a. & d.** Although the rate of motor development varies from child to child, the basic sequence is universal and, therefore, predictable.
 - c.** Rolling over and head lifting are both learned.
3. **a.** is the answer. Mathematical and philosophical reasoning involve fluid and crystallized intelligence, respectively. Because fluid intelligence generally declines with age while crystallized intelligence increases, it is likely that significant mathematical accomplishments will occur at an earlier age than philosophical accomplishments. (p. 185)
4. **c.** is the answer. Early maturing boys tend to be more popular. (p. 166)
 - a.** Early maturing girls may temporarily suffer embarrassment and be the objects of teasing.
 - b. & d.** The social benefits of early or late maturation are based on physical development, not on cognitive skills.
5. **c.** is the answer. This test is designed to determine if the child understands that the quantity of liquid is conserved, despite the shift to a container that is different in shape. (p. 150)
 - a.** These are general processes related to concept building.
 - b.** Object permanence is the concept that an object continues to exist even when not perceived; in this case, the water is perceived throughout the experiment.
6. **a.** is the answer. This child's age and stranger anxiety clearly place him within Piaget's sensorimotor stage. (pp. 149, 155)
7. **b.** is the answer. This child's age, ability to use language, and egocentrism clearly place her within Piaget's preoperational stage. (p. 150)
8. **d.** is the answer. Conservation is a hallmark of the concrete operational stage; egocentrism is a hallmark of the preoperational stage. (pp. 150, 153)
9. **c.** is the answer. Being 4 years old, Jamail would be in Piaget's preoperational stage. Preoperational thinking is egocentric, which means Jamail would find it difficult to "put himself in his sister's shoes" and perceive that she has a brother. (p. 150)
10. **b.** is the answer. (p. 156)
 - a.** Conservation is the ability to realize that the amount of an object does not change even if its shape changes.
 - c.** Egocentrism is having difficulty perceiving things from another's perspective.
 - d.** According to Erikson, basic trust is feeling that the world is safe as a result of sensitive, loving caregivers.
11. **a.** is the answer. Although loving parents will also produce securely attached children, Erikson's theory deals with trust or mistrust. (p. 158)
 - c.** Control is not a factor in this stage of Erikson's theory.
12. **d.** is the answer. (p. 172)
 - a.** This description of Cassandra's feelings does not suggest that her relationship with her parents is deteriorating. Cassandra's social development, like that of most adolescents, is coming under increasing peer influence and diminishing parental influence.
 - b. & c.** Because Cassandra's feelings are normal, there is no reason for her to change her circle of friends or for her parents to seek counseling.
13. **c.** is the answer. (p. 154)
 - a., b., & d.** Piaget did not link cognitive ability to amount of schooling, gender, or differences in how boys and girls are socialized.
14. **a.** is the answer. Children in various cultures do seem to progress through Kohlberg's pre-conventional and conventional levels, which indicates

that some aspects of the development of moral reasoning are universal. (p. 168)

15. c. is the answer. Reasoning is based on fluid intelligence. (p. 184)
 - a. There is no "analytic" intelligence.
 - b. Crystallized intelligence increases up to old age.
16. c. is the answer. Because several variables (education, affluence, etc.) generally distinguish the various groups in a cross-sectional study, it is impossible to rule out that one or more of these, rather than aging, is the cause of the measured intellectual decrease. (p. 183)
 - a. Small sample size and unrepresentativeness generally are not limitations of cross-sectional research.
 - b. This refers to longitudinal research.
17. d. is the answer. (pp. 181–182)
 - a. & c. In tests of recognition memory, the performance of older persons shows little decline.
 - b. The ability to recall material, especially meaningless material, declines with age.
18. d. is the answer. Research has not uncovered a tendency for people of any particular age group to report greater feelings of satisfaction or well-being. (p. 189)
19. c. is the answer. Although some researchers emphasize consistency and others emphasize potential for change, they all agree that consistency increases over the life span. (p. 194)
 - a. One criticism of stage theories is that development does not occur in sharply defined stages.
 - b. Research has shown that individuals' adult personalities cannot be predicted from their first two years.
 - d. Social and emotional style are two of the most stable traits.
20. b. is the answer. Conventional morality is based in part on a desire to gain others' approval. (p. 168)
 - a. Preconventional reasoning is based on external incentives such as gaining a reward or avoiding punishment.
 - c. Postconventional morality reflects an affirmation of agreed-upon rights or universal ethical principles.
 - d. Fear of others' disapproval is one of the bases of conventional moral reasoning.
21. b. is the answer. (p. 172)
 - a. In fact, just the opposite is true: parental influence on children *decreases* during adolescence.
 - d. Teens reflect their parents' social, political, and religious views, but rely on peers for matters of personal taste.

22. c. is the answer. (p. 194)
23. c. is the answer. Carlos' age and struggle to form a close relationship place him squarely in this stage. (p. 170)
 - a. Trust versus mistrust is the psychosocial task of infancy.
 - b. Autonomy versus doubt is the psychosocial task of toddlerhood.
 - d. Identity versus role confusion is the psychosocial task of adolescence.
24. d. is the answer. (p. 189)

Essay Question

Sheryl's age would place her at the threshold of Piaget's stage of formal operations. Although her thinking is probably still somewhat self-focused, Sheryl is becoming capable of abstract, logical thought. This will increasingly allow her to reason hypothetically and deductively. Because her logical thinking also enables her to detect inconsistencies in others' reasoning and between their ideals and actions, Sheryl and her parents may be having some heated debates about now.

According to Kohlberg, Sheryl is probably at the threshold of postconventional morality. When she was younger, Sheryl probably abided by rules in order to gain social approval, or simply because "rules are rules" (conventional morality). Now that she is older, Sheryl's moral reasoning will increasingly be based on her own personal code of ethics and an affirmation of people's agreed-upon rights. Because she is a woman, her morality may be more concerned with caring about relationships.

According to Erikson, psychosocial development occurs in eight stages, each of which focuses on a particular task. As an adolescent, Sheryl's psychosocial task is to develop a sense of self by testing roles, then integrating them to form a single identity. Erikson called this stage "identity versus role confusion."

Key Terms

1. **Developmental psychology** is the branch of psychology concerned with physical, cognitive, and social change throughout the life span. (p. 139)
2. The **zygote** (a term derived from the Greek word for "joint") is the fertilized egg, that is, the cluster of cells formed during conception by the union of sperm and egg. (p. 140)
3. The **embryo** is the developing prenatal organism from about 2 weeks through 2 months after conception. (p. 141)

4. The **fetus** is the developing prenatal human from 9 weeks after conception to birth. (p. 141)
5. **Teratogens** (literally, poisons) are any drugs, viruses, or other substances that cross the mother's placenta and can harm the developing embryo or fetus. (p. 141)
6. **Fetal alcohol syndrome (FAS)** refers to the physical and cognitive abnormalities that heavy drinking by a pregnant woman may cause in the developing child. (p. 142)
7. The **rooting reflex** is the newborn's tendency, when his or her cheek is stroked, to orient toward the touch, open the mouth, and search for the nipple. (p. 142)
8. A simple form of learning used to study infant cognition, **habituation** is decreasing responsiveness to a stimulus that is repeatedly presented. (p. 143)
9. **Maturation** refers to the biological growth processes that enable orderly changes in behavior and are relatively uninfluenced by experience or other environmental factors. (p. 145)
Example: The ability to walk depends on a certain level of neural and muscular **maturation**. For this reason, until the toddler's body is physically ready to walk, practice "walking" has little effect.
10. In Piaget's theory of cognitive development, **schemas** are mental concepts or frameworks that organize and interpret information. (p. 147)
11. In Piaget's theory, **assimilation** refers to interpreting a new experience in terms of an existing schema. (p. 148)
12. In Piaget's theory, **accommodation** refers to changing an existing schema to incorporate new information that cannot be assimilated. (p. 148)
13. **Cognition** refers to all the mental processes associated with thinking, knowing, remembering, and communicating. (p. 148)
14. In Piaget's theory of cognitive stages, the **sensorimotor stage** lasts from birth to about age 2. During this stage, infants gain knowledge of the world through their senses and their motor activities. (p. 149)
15. **Object permanence**, which develops during the sensorimotor stage, is the awareness that things do not cease to exist when not perceived. (p. 149)
16. In Piaget's theory, the **preoperational stage** lasts from about 2 to 6 or 7 years of age. During this stage, language development is rapid, but the child is unable to understand the mental operations of concrete logic. (p. 150)
17. **Conservation** is the principle that properties such as number, volume, and mass remain constant despite changes in the forms of objects; it is acquired during the concrete operational stage. (p. 150)
18. In Piaget's theory, **egocentrism** refers to the difficulty that preoperational children have in considering another's viewpoint. "Ego" means "self," and "centrism" indicates "in the center"; the preoperational child is "self-centered." (p. 150)
19. Our ideas about our own and others' thoughts, feelings, and perceptions and the behaviors these might predict constitute our **theory of mind**. (p. 151)
20. **Autism** is a disorder that appears in childhood and is marked by deficiencies in communication, social interaction, and theory of mind. (p. 152)
21. During the **concrete operational stage**, lasting from about ages 6 or 7 to 11, children can think logically about concrete events and objects. (p. 153)
22. In Piaget's theory, the **formal operational stage** normally begins about age 12. During this stage people begin to think logically about abstract concepts. (p. 154)
Memory aid: To help differentiate Piaget's stages remember that "operations" are mental transformations. *Preoperational* children, who lack the ability to perform transformations, are "before" this developmental milestone. Concrete operational children can operate on real, or concrete, objects. Formal operational children can perform logical transformations on abstract concepts.
23. **Stranger anxiety** is the fear of strangers that infants begin to display at about 8 months of age. (p. 155)
24. **Attachment** is an emotional tie with another person, shown in young children by their seeking closeness to a caregiver and showing distress on separation. (p. 155)
25. A **critical period** is a limited time shortly after birth during which an organism must be exposed to certain experiences or influences if it is to develop properly. (p. 156)
26. **Imprinting** is the process by which certain animals form attachments during a limited critical period early in life. (p. 156)
27. According to Erikson, **basic trust** is a sense that the world is predictable and trustworthy—a concept that infants form if their needs are met by responsive caregiving. (p. 158)

28. **Self-concept** is a person's sense of identity and personal worth. (p. 161)
29. **Adolescence** refers to the life stage from puberty to independent adulthood, denoted physically by a growth spurt and maturation of primary and secondary sex characteristics, cognitively by the onset of formal operational thought, and socially by the formation of identity. (p. 164)
30. **Puberty** is the early adolescent period of sexual maturation, during which a person becomes capable of reproduction. (p. 165)
31. The **primary sex characteristics** are the body structures (ovaries, testes, and external genitalia) that enable reproduction. (p. 165)
32. The **secondary sex characteristics** are the nonreproductive sexual characteristics, for example, female breasts, male voice quality, and body hair. (p. 165)
33. **Menarche** is the first menstrual period. (p. 166)
34. In Erikson's theory, establishing an **identity**, or one's sense of self, is the primary task of adolescence. (p. 171)
35. In Erikson's theory, **intimacy**, or the ability to establish close, loving relationships, is the primary task of late adolescence and early adulthood. (p. 172)
36. **Menopause** is the cessation of menstruation and typically occurs in the early fifties. It also refers to the biological and psychological changes experienced during a woman's years of declining ability to reproduce. (p. 176)
37. **Alzheimer's disease** is a progressive and irreversible brain disorder caused by deterioration of neurons that produce acetylcholine. It is characterized by a gradual loss of memory, reasoning, language, and, finally, physical functioning. (p. 180)
38. In a **cross-sectional study**, people of different ages are compared with one another. (p. 183)
39. In a **longitudinal study**, the same people are tested and retested over a period of years. (p. 183)
40. **Crystallized intelligence** refers to those aspects of intellectual ability, such as vocabulary and general knowledge, that reflect accumulated learning. Crystallized intelligence tends to increase with age. (p. 184)
41. **Fluid intelligence** refers to a person's ability to reason speedily and abstractly. Fluid intelligence tends to decline with age. (p. 184)
42. The **social clock** refers to the culturally preferred timing of social events, such as leaving home, marrying, having children, and retiring. (p. 187)

Cross-Check

ACROSS

1. accommodation
5. fluid
7. imprinting
10. embryo
12. schema
14. menarche
15. longitudinal

DOWN

2. crystallized
3. autism
4. assimilation
5. fetus
6. conservation
8. cross-sectional
9. zygote
11. teratogen
13. habituation

FOCUS ON VOCABULARY AND LANGUAGE

Page 139: As we journey through life—from *womb to tomb*—when, how, and why do we develop? In the process of becoming who we are, and as we travel (*journey*) through life, from conception to death (*womb to tomb*) we change and mature physically, psychologically, and socially. (Another humorous expression describing the life span or life cycle is from “sperm to worm.”)

Infancy and Childhood

Page 144: . . . *toddler* . . . This describes a child who is beginning to learn to walk and who walks with short, uneven steps.

Page 144: After birth, the neural networks that eventually enabled you to walk, talk, and remember had

a *wild growth spurt*. Myers points out that when you were born, you had all the brain cells that you will ever have. But after birth there is a very rapid development (*a wild growth spurt*) in the number of connections between neurons.

Page 146: Trying to access memories of those first four years is like trying to read a document formatted by an earlier version of a computer operating system. This reference is to the similarity between the brain and a computer. If computer software used for creating a document was programmed (*formatted*) on an earlier version of a computer, then it will not be easy to read the document on a newer version. Early preschool memories may not have been erased, but because they were programmed on a different, or earlier, system (*the child*), they are hard to access or retrieve later on a newer system (*the adult*).

Page 147: . . . *fruitless* . . . This word means to be unproductive or useless (like a tree that does not produce fruit). It is pointless (*fruitless*), according to Piaget's theory, to try to teach a child who is in the preoperational stage of development how to use abstract logic to solve a complex problem (formal operational reasoning).

Page 149: In one of his tests, Piaget would show an infant an appealing toy and then *flop his beret over it* to see whether the infant searched for the toy. When Piaget tested object permanence, he showed the child an attractive toy and then covered it with his soft round hat (*he flopped his beret over it*). Very young babies do not search for the hidden toy—when they can't see it, they don't appear to think about it (*what is out of sight is out of mind*).

Page 149: When she lifted the screen, the infants sometimes *did a double take*, staring longer when shown a wrong number of objects. In this experiment with 5-month-old infants, Karen Wynn showed that these very young children were capable of conceptual thinking. She did this by measuring their reaction time to expected and unexpected outcomes. Shown an impossible outcome, infants stared longer (*they did a double take*) and they also demonstrated a mental capacity for detecting changes or differences in the frequency of events (*they have a head for numbers*).

Page 151: When Little Red Riding Hood realizes her "*grandmother*" is really a wolf, she swiftly revises her ideas about the creature's intentions and races away. Preschoolers gradually begin to understand that other people have mental capacities, intentions, motivations, feelings, etc. (*children form a theory of mind*). This is illustrated when the young girl in the children's story called *Little Red Riding Hood* recognizes that the big bad wolf (disguised as her grandmother) has very bad intentions toward her, and she quickly escapes (*races away*).

Page 154: *Piaget's stage theory has been influential. In some respects, it gets high marks.* Piaget's theory has been controversial, having both supporters and critics. Cross-cultural research supports the basic stages he proposed (*it gets high marks*), but most researchers believe that development is more continuous than Piaget thought. Children have more conceptual abilities at earlier periods than his theory suggested.

Page 154: . . . *cognitive milestones* . . . A milestone is an event of significance or importance. (Originally, a milestone was a large stone by the roadside

inscribed with the distance in miles to nearby towns.) Myers notes that the age at which children usually succeed at important mental tasks (*cognitive milestones*) is of less relevance than the developmental order or sequence in which these abilities appear.

Page 154: Teachers would do better to *build on* what children already know, engaging them in *concrete demonstrations* and stimulating them to *think for themselves*. Preschool and elementary school children think differently from adults. In order for them to become independent thinkers (*think for themselves*), Piaget recommends that they be given specific, tangible examples (*concrete demonstrations*) that utilize (*build on*) their existing knowledge.

Page 155: *To pit the drawing power of a food source against the contact comfort of the blanket, Harlow created two artificial mothers.* Harlow's experiment was designed to test whether food or nourishment was more rewarding than the comfort of a soft terry cloth. Thus, when he tested the attraction (*pitted the drawing power*) of the artificial mother who supplied food against the soft comfort of the terry cloth mother (*contact comfort*), he was surprised that they preferred the cloth mother. They used "her" as a *secure base* from which to explore and a safe place (*safe haven*) to return to when frightened or anxious.

Page 156: The first moving object a *gosling, duckling, or chick* sees during the hours shortly after *hatching* is normally its mother. A *gosling* is a young goose, a *duckling* a young duck, and a *chick* a young chicken. What all these young fowl have in common is a tendency to follow, or trail after, the first larger moving object they see shortly after they emerge (*hatch*) from the eggshell. This attachment process is called **imprinting**.

Page 156: "*Mere exposure*" to people and things fosters *fondness*. Children do not imprint in the same way that ducklings and other animals do; nevertheless, repeated encounters with (or *exposure to*) other humans and objects encourage or promote liking and attachment (*fosters fondness*). As Myers puts it, "*familiarity breeds content*." This is a twist on the old saying "*familiarity breeds contempt*" and suggests that intimacy creates (*breeds*) satisfaction (*contentment*) rather than scorn (*contempt*).

Page 157: But evidence increasingly indicates that fathers are more than just *mobile sperm banks*. A *sperm bank* is where donated sperm is stored until it is used for artificial insemination. More and more research shows that fathers are not simply sperm

producers who can move around (*mobile sperm banks*) and get mothers pregnant. Rather, evidence suggests they are capable caregivers who may interact with their babies much as mothers do.

Page 159: . . . can leave *footprints* on the brain. Traumatic experiences that occur early in development can have an effect on brain functioning; metaphorically, they can leave impressions (*footprints*) on the brain. The production of neurotransmitters such as serotonin, which calms aggressive impulses, is slower (*sluggish*) in abused children who become aggressive teens and adults.

Page 161: In a simple variation of the mirror procedure, researchers *sneakily dabbed rouge* on children's noses before placing them in front of the mirror. In order to find out at what point in development a child realizes that her mirror image is herself and not another child, researchers use a clever technique. Unobtrusively (*sneakily*) and without the child's awareness, they gently rubbed (*dabbed*) some red makeup (*rouge*) on the child's nose before allowing her to view herself in the mirror. If children have the concept of self, they will be surprised at the red spot and touch their noses. This actually happens around 15 to 18 months of age, and self-concept begins to grow from then on.

Page 161: *Parenting styles* vary. Some parents *spank*, some *reason*. Some are *strict*, some are *lax*. When it comes to child-rearing practices (*parenting styles*), there is much variability: (a) some parents use strict controls and physical punishment (*spanking*); (b) others talk and discuss problems and issues with their children (*reason with them*); and (c) still others allow the children to do what they want and make few demands of them (*they are lax*). Myers identifies these parenting styles as (a) *authoritarian*, (b) *authoritative*, and (c) *permissive*.

Page 162: Before jumping to conclusions about the results of different parenting styles, *heed this caution*. Myers is suggesting that we must be careful (*heed a caution*) before quickly deciding (*jumping to conclusions*) about the merits of various parenting styles. He points out that the evidence is correlational and does not imply cause and effect. Thus, there may be other factors that are causally involved (e.g., some children may, because of their temperament, engender [elicit] greater trust and warmth from their parents).

Adolescence

Page 166: Early maturation *pays dividends* for boys. If onset of puberty occurs before the expected or usual

time (*early maturation*), it will be much less stressful for boys than for girls. In general, for boys in their early teen years, being stronger and more athletic leads to more self-assurance, greater popularity, and greater independence (*it pays dividends*).

Page 166: If a young girl's body is *out of sync* with her own emotional maturity and her friends' physical development and experiences, she may begin associating with older adolescents or may suffer teasing or sexual harassment. *Sync* is an abbreviation of *synchronize*, which means to occur at the same time. So, if a girl's biological development is not proceeding at the same rate (*out of sync*) with her emotional and social development, she may start fraternizing (*associating*) with and imitating the behavior of older girls. Thus, early maturation can be a problem for girls, especially if the people around them react in an inappropriate or suggestive manner to their physical development (*sexual harassment*) or make fun of them (*tease them*).

Page 167: Gradually, though, most achieve the *intellectual summit* that Piaget called *formal operations*. The *formal operational* stage is the highest level in Piaget's theory of cognitive development (*intellectual summit*). Most adolescents reach this stage and are capable of logical and abstract reasoning. For example, many think about (*ponder*) and discuss (*debate*) such issues as good and evil, truth and justice, and other abstract topics about human nature.

Page 168: A crucial task of childhood and adolescence is discerning right from wrong and developing *character*—the *psychological muscles for controlling impulses*. *Character* refers to the total qualities a person possesses, including attitudes, beliefs, interests, actions, and a philosophy of life. By developing *character*, adolescents learn to have the intellectual strength (*psychological muscles*) to refrain from acting immorally (*controlling impulses*). Kohlberg proposed a controversial stage theory of moral development which has three levels: preconventional, conventional, and postconventional.

Page 168: Kohlberg's claim was that these levels form a *moral ladder* (Figure 4.22). In Kohlberg's view children have to go through each of the three stages (preconventional, conventional, and postconventional) in succession much as a person climbs a ladder, one rung at a time, from bottom to top. The lowest rung on this *moral ladder* involves self-interest and avoidance of punishment; the highest rung, which often develops during and after adolescence, is concerned with personal ethical principles and universal justice. Critics contend that the theory has cultural and gender biases.

Page 169: . . . *throw a switch* . . . This means to pull a lever. People's moral reasoning and judgments are affected by basic emotional reactions (*gut-level feelings*). This phenomenon is evident in the situation requiring a choice between two unpleasant alternatives (*a dilemma*). Either pulling a lever (*throwing a switch*) or pushing a person onto the tracks results in five people being saved and one person dying, but the latter choice causes much more emotional conflict (*the brain's emotion areas light up*).

Page 170: Our moral thinking and feeling surely affect our moral talk. But sometimes *talk is cheap* and emotions are fleeting. The expression *talk is cheap* means that it is easy to say you believe something or to say that you are going to do something; it costs you nothing just to speak about it (*talk is cheap*). However, action, or actually carrying out the correct behavior, is also involved in morality.

Page 170: . . . *psychosocial task* . . . According to Erikson, each stage of life involves a dilemma (*crisis*) that has to be resolved before we can move on to the next stage. These tasks involve interactions between ourselves, our surroundings, and other people; thus, they are *social* in nature. The psychosocial assignment (*psychosocial task*) of adolescence involves *role confusion vs. forming an identity*. (This is sometimes called an **identity crisis**).

Page 171: Erikson noticed that some adolescents *forge* their identity early, simply by taking on their parents' values and expectations. *Forge* literally means to form or shape by heating and hammering metal. Erikson observed that some young people form (*forge*) their identities early, while others never quite appear to acquire a strong feeling of who they are (i.e., they don't *find themselves*).

Page 173: As people mature in young adulthood, *their emotional ties with parents loosen*. During their early twenties, many still *lean heavily on their parents*. The time period between 18 and the mid-twenties is sometimes called the emerging adulthood stage. During this period, young adults have less need for close emotional contact with parents (*emotional ties with parents loosen*); nevertheless, many still rely on their parents for financial and social support (*they still lean heavily on their parents*).

Page 173: That *gap*—the years spent *morphing* from child to adult—is adolescence. The time period (*gap*) between the end of childhood and the beginning of adulthood involves many social and biological changes; the person is transformed (*morphed*) from one type of entity (a child) to something quite different (an adult).

Adulthood

Page 177: The above statements—all false—are among the *misconceptions* about aging *exploded* by recent research on the world's most rapidly growing population group. To "explode misconceptions" means to dispel or get rid of erroneous beliefs that have no foundation in fact. The false statements (*misconceptions*) listed in the text have all been refuted by the results of new experiments and investigations.

Page 178: In later life, the stairs get steeper, the print gets smaller, and people seem to *mumble* more. This is not meant to be taken literally. Myers is pointing out that as we become older, our sensory and perceptual abilities change so that our reaction time and our ability to see and hear decline. Thus, the stairs *appear* steeper, the print *seems* smaller, and people do not appear to be speaking clearly (*they mumble*).

Page 179: Aging *levies a tax* on the brain by slowing our neural processing. Myers is pointing out that aging is accompanied by a decrease in some perceptual and cognitive abilities. Just as you have less money after taxes have been assessed (*levied*) on your income, there are some losses in the brain's ability to function optimally due to the aging process.

Page 180: We are more likely to *rust from disuse than to wear out from overuse*. "Use it or lose it" is sound advice. When adults remain active physically, sexually, and mentally (they "use it"), they are less likely to become inactive later in life ("lose it"). If we follow sedentary life-styles, we will be like unused pieces of metal machinery that suffer from rust; on the other hand, keeping active will not do us any harm (*we won't wear out from overuse*); instead, we may benefit both mentally and physically.

Page 183: According to this more optimistic view, the *myth* that intelligence sharply declines with age is *laid to rest*. The false idea (*myth*) that our intellectual abilities decrease as we get older has been destroyed or buried (*laid to rest*) by recent **longitudinal research**. This research tests the same group of people over many years and may give more accurate results than testing many groups of people (each group having a different age range) at one period in time (**cross-sectional research**). However, both research methods have their own problems (*pitfalls*).

Page 184: . . . *hold their own* . . . Older adults compare favorably with younger adults (*they hold their own*) on tests that assess such things as general vocabulary, knowledge, ability to integrate information,

and good judgment. As Myers notes, **crystallized intelligence** (accumulated knowledge and verbal skills) tends to increase with age, whereas **fluid intelligence** (ability to reason rapidly and abstractly—*quick thinking smarts*) tends to decrease during late adulthood.

Page 187: “Pair-bonding is a trademark of the human animal,” notes anthropologist Helen Fisher (1993). *Pair-bonding* refers to the monogamous attachment formed between one person and another, such as with a marriage partner, and this affiliation is characteristic (*a trademark*) of human beings.

Page 187: Might *test-driving life together* in a “trial marriage” minimize divorce risk? Does premarital cohabitation or a “trial marriage” (*test-driving life together*) increase the probability of a successful later marriage and reduce the likelihood of divorce (*minimize divorce risk*)? The research suggests it does not. Those who live together before marriage are more likely to get divorced than those who don’t. (These findings are correlational and can’t be used to make causal inferences.)

Page 188: Some couples fight but also *shower* one another with affection. Other couples never raise their voices yet also seldom praise one another or *nuzzle*. Myers notes that some couples have many open conflicts but also treat each other with warmth and care (*shower one another with affection*), while others who seldom argue loudly (*never raise their voices*) may fail to be openly complimentary (*praise one another*) or to tenderly embrace or cuddle up together (*nuzzle*). Although both styles can work, the best predictor of marital success is a ratio of at least 5 to 1 of positive interactions (smiling, touching, complimenting, and laughing) to negative interactions (sarcasm, criticism, putdowns, and insults).

Page 190: As the years go by, *feelings mellow*. . . . *Highs become less high, lows less low*. Our feelings become less extreme (*they mellow*) as we age: the excitement and elation (*highs*) and the depression and gloom (*lows*) do not encompass such a broad range of feelings as they once did. Myers states it nicely when he says, “As we age, life becomes less an emotional roller coaster, more like paddling a canoe.”

Reflections on Two Major Developmental Issues

Page 193: . . . *do they differ as a giant redwood differs from its seedling . . . or . . . as a butterfly differs from a caterpillar . . . ?* The giant redwood is a large coniferous tree that grows in a continuous, cumulative way from seedling to mature tree. On the other hand, the butterfly emerges as a different creature after passing through a stage as a caterpillar. The question developmental psychologists ask is: Are changes throughout the life span (from infant to adult) due to a slow, continuous shaping process (like the tree), or do we go through a series of genetically preprogrammed stages (like the butterfly)?

Page 194: Many a 20-year-old *goof-off* has matured into a 40-year-old business or cultural leader. To *goof off* means to avoid work and act in a lazy manner; a person who behaves this way is called a *goof-off*. Some traits, such as temperament, are relatively stable over time, but everyone changes in some way with age. Thus, a lazy youth (*20-year-old goof-off*) may develop (*mature*) into a more productive adult (*40-year-old leader*).