

**Massachusetts  
Tests for Educator Licensure® (MTEL®)**



**Physical  
Education (22)  
PRACTICE TEST  
APPENDIX:  
Multiple-Choice  
Question Analyses**



**[www.mtel.nesinc.com](http://www.mtel.nesinc.com)**

Copyright © 2016 Pearson Education, Inc. or its affiliate(s). All rights reserved.  
Evaluation Systems, Pearson, P.O. Box 226, Amherst, MA 01004

Massachusetts Tests for Educator Licensure and MTEL are trademarks of the  
Massachusetts Department of Elementary and Secondary Education and Pearson Education, Inc. or its affiliate(s).  
Pearson and its logo are trademarks, in the U.S. and/or other countries, of Pearson Education, Inc. or its affiliate(s).

*Readers should be advised that this practice test, including many of the excerpts used herein, is protected by federal copyright law.*

*Test policies and materials, including but not limited to tests, item types, and item formats, are subject to change at the discretion of the Massachusetts Department of Elementary and Secondary Education.*

## MULTIPLE-CHOICE QUESTION ANALYSES

1. Which of the following intellectual milestones is most closely associated with the adolescent stage of human growth and development?
  - A. becoming interested in abstract ideas and the process of thinking itself
  - B. operational thinking that allows one to mentally combine, order, and transform objects and actions
  - C. learning to take intentions into account in judging the behaviors of others
  - D. representing reality to oneself through the use of symbols, gestures, and mental images

**Correct Response: A.** During adolescence, students develop reasoning skills and the ability to think abstractly and in hypothetical terms. The ability to think in concrete, or operational, terms that enables children to mentally combine, order, and transform objects and actions **(B)** typically develops between seven and twelve years of age. As five and six year olds become more aware of their own emotions and intentions, they begin to recognize them in others and develop skills that enable them to understand others' motivations and feelings **(C)**. Between the ages of two and seven, children generally develop the ability to think about objects that are not physically present and to use symbols to represent them **(D)**.

2. Which of the following best describes the usual progression of physical growth in infants and toddlers?
- A. Physical growth occurs first in the lower body and proceeds upward to the torso and head.
  - B. Physical growth occurs in all major regions of the body simultaneously at about the same rate.
  - C. Physical growth occurs first in the head and proceeds downward to the trunk and outward toward the extremities.
  - D. Physical growth occurs variably in individuals with no typical starting point or progression of growth.

**Correct Response: C.** Two general patterns govern the physical growth of infants and toddlers. The first, the cephalocaudal pattern, consists of development from the upper body downward to the lower body, i.e., from the head to the trunk to the feet. The second general pattern of growth, the proximodistal pattern, starts at the center of the body and progresses outward, toward the extremities. Different regions of the body do not develop at the same rate simultaneously (**B**). In a young child, the lower body tends to develop after the upper body (**A**). Children's physical development follows the same general patterns (**D**), with individual variations in timing and rates of growth.

3. Maximum physical strength for both males and females is generally achieved after age 20 because this is typically the time in which:
- A. metabolic rate is slowest.
  - B. cellular metabolism of free radicals is greatest.
  - C. muscular cross-sectional areas are largest.
  - D. myelination of the spinal cord is completed.

**Correct Response: C.** The body's muscle mass steadily increases from birth through adolescence and typically plateaus between ages 16 and 20 for females and ages 18 and 25 for males. The muscular strength of both males and females peaks anywhere from 20 to 30 years old. Because muscle force is proportional to cross-sectional area, an individual's potential for maximum physical strength occurs after about age 20. Metabolic rate (**A**) is a measure of energy expenditure by the body. Free radicals (**B**) are a byproduct of metabolic functions and can damage body cells, rather than contribute to the growth and strength of muscle fibers. In the central nervous system, myelin is the insulating covering that forms around nerve fibers. Myelination (**D**) occurs rapidly in childhood and although it aids in skilled motor performance by enabling nerve impulses to move more quickly, it is less relevant to attaining peak strength than the size of cross-sectional areas in muscles.

4. In general, heredity plays the largest role in influencing which area of personal growth and development?
- A. body type and composition
  - B. susceptibility to stress-related illnesses
  - C. degree of strength and flexibility that can be achieved with fitness training
  - D. quality of relationships with friends, teachers, and classmates

**Correct Response: A.** To a large degree, an individual's body type and composition are determined by heredity, or genetics. Although environmental factors such as physical activity, nutrition, and disease influence the full expression of inherited traits, scientific studies confirm that genetics play a major role in determining body type and body composition (the proportion of fat, muscle, and bone in an individual's body). While certain predispositions related to stress and illness **(B)** and physical strength and flexibility **(C)** may be influenced by heredity, environmental conditions more significantly influence the development of these conditions than body type. In personal development, quality of relationships **(D)** are affected by many social and emotional factors, such as the presence of early positive relationships, secure attachments to caregivers, and nurturing environments.

5. Which of the following is a recommended nutritional practice to promote optimal growth and development in young children?
- A. including foods that contain more fats than protein in daily meals to promote increased energy stores
  - B. consuming three moderately large meals and avoiding or limiting snacks and treats to promote desirable eating patterns
  - C. including foods that contain more fiber than fat in daily meals to promote healthy digestive functions
  - D. consuming several small meals and snacks of mixed carbohydrates, proteins, and fats each day to promote variety in eating

**Correct Response: D.** A relative balance of carbohydrates, fat, and protein is especially important in children's diets to promote optimal growth and development. Carbohydrates supply children's daily energy needs; proteins help build, maintain, and replace the body's tissues; and fats play an important role in brain development, vitamin absorption, and energy supply. Eating several small meals and snacks, which helps stabilize energy levels, and eating meals that contain a variety of foods each day contributes to children's development of healthful lifelong dietary habits. Eating three meals a day while limiting snacks and treats (**B**) can leave long gaps in which high levels of hunger develop, which can contribute to overeating during meals. Foods high in fat (**A**) or fiber (**C**) may be important components of a child's balanced diet, but would not be the primary focus of nutrition plans for children.

6. In the skeletal system, the function of tendons is to:
- A. act as a reservoir for calcium and phosphorous.
  - B. attach bones to muscles.
  - C. act as the formation centers for cartilage.
  - D. attach ligaments to muscle fibers.

**Correct Response: B.** Tendons are bands of fibrous connective tissue that connect bones to muscles. Calcium is stored in the bones, and phosphorus is present in all cells, though most is stored in bones and teeth **(A)**. Cartilage, which cushions bones at joints, is connective tissue that begins to form during embryonic development and grows slowly through cell division **(C)**. Ligaments are connective tissue that connects bones to bones **(D)**.



7. Which of the following is an accurate description of the way in which a muscle group generates force during an exercise such as a standing barbell curl?
- A. The maximal force-development capacity is limited to the weakest point in the range of motion.
  - B. The generation of force remains constant during the entire motion.
  - C. The maximal force-development capacity increases as the weight is lifted above waist-level.
  - D. The generation of force varies throughout the full range of motion.

**Correct Response: D.** When lifting a steady amount of weight, the amount of strength an individual uses varies relative to the position of the weight in the individual's range of motion. During a standing barbell curl, the lifter's maximal strength production by the elbow flexors occurs while the elbows are bending, but not fully flexed or straight, which are the weakest points in the range of motion **(A)**. The generation of strength does not remain constant through the entire motion **(B)**. As the barbell is lifted above the waist and the elbows approach full flexion, the generation of strength declines rather than increases **(C)**.

8. The ability to time movements to intercept a moving object, such as when catching a ball, is most dependent on an individual's ability to integrate motor behaviors with:
- A. sensory information about the speed and direction of the object.
  - B. an understanding of how wind and air resistance affect the object's momentum.
  - C. visual information about the relative positions of body parts.
  - D. knowledge about the object's weight and the force with which it was propelled.

**Correct Response: A.** To intercept a moving object, an individual uses visual, auditory, and other sensory information about the object's movement, including speed and direction, to direct body movements toward the object. The relative position of an individual's body parts is determined largely through proprioception, the perception of movement and spatial orientation arising from stimuli within the body, rather than through visual information alone **(C)**. The effects of wind and air resistance **(B)** or the object's weight and the force with which it is propelled **(D)** influence the object's trajectory, but visual and other sensory information is used to instantaneously track and respond to any changes in timing and direction.

9. The tendency of female adolescents to exhibit greater motor control on a balance beam than male adolescents is largely due to females':
- A. narrower hips relative to shoulder width.
  - B. longer legs relative to total height.
  - C. greater body density relative to overall body composition.
  - D. lower center of gravity.

**Correct Response: D.** The earth's gravitational pull concentrates on a person's center of gravity (COG), or the point around which the person's body mass is balanced. In general, from adolescence on, females have more mass in the hips and lower body while males have more mass in the torso and upper body. Therefore, females generally have a lower COG. The lower the center of gravity, the more stable an object is and the easier it is to balance. Females tend to have narrow shoulders relative to hip width, but having narrow hips relative to shoulder width **(A)** would create a higher COG and less stability. Longer legs relative to height **(B)** would shift the mass of the torso and hips upwards, raising COG and decreasing stability. Greater body density creates higher mass within the same space, but only affects balance and stability if the density is greater in one part of the body than another **(C)**.

10. In a typical progression of motor skill development, which of the following skills is generally most difficult for children to master?
- A. skipping
  - B. galloping
  - C. sliding
  - D. hopping

**Correct Response: A.** Skipping is a more complex locomotor skill than walking, running, hopping, or sliding because it uses a step combined with a hop in an uneven rhythm pattern and also requires skill in balancing, as the step and hop occur on the same foot. Galloping, which is a combination of a walk and a run in an uneven pattern in which one foot chases the other, is typically mastered after achieving competence with running (**B**). Sliding is a gallop performed sideways (**C**). Hopping must be learned before skipping as it is an integral component of a skip (**D**).

11. Which of the following is characteristic of performance of an open motor skill?
- A. The participant often performs the skill without having to respond to changing conditions.
  - B. The skill can only be performed as a continuous, repetitive skill rather than a discrete skill.
  - C. The participant often performs the skill in an unpredictable, changing environment.
  - D. The skill can be performed in precisely the same way each time regardless of the context.

**Correct response: C.** An open motor skill is a motor skill performed in a dynamic or unpredictable environment. In games, open motor skills are externally paced and adjusted to accommodate constantly changing conditions, such as in response to the actions of teammates or opponents or the variable speed or direction of a moving ball (e.g., as in basketball, softball, or soccer). A closed motor skill is one that is internally paced and regularly performed in a predictable or stable environment (e.g. as in diving or gymnastics). Unlike the performer of an open motor skill, the performer of a closed motor skill does not have to respond to changing conditions **(A)**. A repetitive skill **(B)** is continuous and cyclical in nature, with the follow through from one execution leading directly into the next repetition of the movements involved. A skill than can be performed in precisely the same way each time regardless of the context **(D)** would be considered a closed motor skill.

12. A student is learning a new complex motor skill. The student will most likely benefit from the principle of transfer of learning if the:
- A. new motor skill is similar to one already mastered.
  - B. student is open to feedback from both teachers and peers.
  - C. new motor skill is a discrete skill rather than a continuous one.
  - D. student has no preconceived notions about the motor skill.

**Correct Response: A.** The principle of transfer of learning in the context of motor skill acquisition states that knowledge of a previously learned skill will promote learning of a new skill if the two skills share the same movement pattern or are similar in technique. Positive transfer of learning occurs when there is a similarity between both skills or when both skills require the same cognitive process. Remaining open to feedback (**B**) is important in any learning experience, but feedback is not central to the principle of transfer of learning. The transfer of learning principle applies to discrete and continuous skills (**C**) and to learning situations in which the student may or may not hold preconceived notions about the new skill (**D**).

13. In which stage of motor learning are students typically capable of detecting errors in their own motor performance and taking steps to correct them, but cannot yet eliminate them?
- A. cognitive stage
  - B. associative stage
  - C. autonomous stage
  - D. verbal stage

**Correct Response: B.** In the associative stage of learning a motor skill, a student understands the fundamentals of the skill well enough to recognize errors and explore ways to correct them. In this stage, a student works on performing and refining a skill but cannot yet eliminate all performance errors. In the cognitive **(A)**, or verbal **(D)**, stage, the beginning phase of motor learning, the student is introduced to a motor skill and works on understanding the basic motor task and its objective. The autonomous stage **(C)** is the final stage in motor learning; in this stage, the student performs skills automatically with few or no errors.

14. Swimming strokes such as the crawl are defined as continuous or repetitive motor tasks because the:
- A. skills are performed in a medium in which a greater degree of resistance is encountered than in air.
  - B. movement through the water can be sustained with no physical effort by keeping the body flat in the water.
  - C. strokes and kicking motions require unilateral rather than bilateral coordination.
  - D. recovery of the arms and legs leads directly into the next stroke, with no recognizable beginning and end.

**Correct Response: D.** In a repetitive skill, the actions that constitute the movement pattern are used in a continuous cycle throughout the activity: one complete cycle of the skill leads directly into the next. In the crawl stroke, the movements of the arms and legs that end one stroke cycle become a recovery that initiates the next stroke cycle. The medium or context in which a skill is performed **(A)** and **(B)** is not a factor in determining its repetitive or cyclical nature. Swimming strokes and kicking movements require bilateral rather than unilateral coordination **(C)**, with both sides of the body working either symmetrically or reciprocally.



15. Which of the following locomotor skills is typically most difficult for five year olds to perform?
- A. jogging across the length of a classroom
  - B. walking along a low balance beam
  - C. hopping on one foot from one end of a classroom to the other end
  - D. walking along a circular pattern marked by tape on the floor

**Correct Response: C.** Hopping is a locomotor skill that requires the ability to balance on one foot; typically, children should be able to demonstrate a mature hopping pattern by second grade. The hop involves taking off from one foot, sustaining a brief period of nonsupport, and landing on the same foot. Because hopping requires balance on one side of the body, counterbalance from the opposite side of the body, leg strength, and coordination of the step and swing of the knee up and forward, it is more challenging than walking or jogging. Walking along a low balance beam **(B)** and a circular path on the floor **(D)** both involve balance but are executed with both feet in contact with a surface, making them easier to master than hopping. Jogging **(A)** shifts balance from one foot to the other and presents little difficulty to five year olds.

16. Which of the following is an appropriate technique to emphasize to children who are practicing throwing a ball using an underhand throw?
- A. releasing the ball at chest level on the throw
  - B. stopping the action of the follow through just after releasing the ball
  - C. beginning the throw with the side of the body facing the target
  - D. taking one step forward with the foot opposite the throwing hand

**Correct Response: D.** A forward step with the leg opposite the throwing arm counterbalances the arm movement and provides stability as an underhand throw is executed. As the step is made, the front, rather than the side, of the body should face the desired direction of the throw **(C)**. The ball should be released at or below waist level, not chest level **(A)**, and the throwing arm should follow through, continuing the arc of the throwing motion after releasing the ball **(B)**.

17. Which of the following techniques is most appropriate for players to keep in mind when dribbling a soccer ball?
- A. alternating between the two feet in kicking the ball and keeping the eyes on the ball
  - B. moving at a speed faster than a walk and keeping the ball within two to four feet of the body
  - C. traveling in a zigzag pathway and keeping the ball directly below the head while moving
  - D. using a running motion to travel and delivering a series of taps to the ball with the foot

**Correct Response: D.** Dribbling with the feet involves using steady touches or taps to move the ball forward or sideways while using a running motion to travel. The nonsupporting foot is used. Dribbling does not require alternating use of the feet, nor keeping the eyes on the ball **(A)**; rather, the head and eyes are kept up to maintain direction and awareness of other players. The ball should be controlled as close to the feet as possible rather than within a sphere of a few feet **(B)**. Although students should vary pathways to evade opponents, a traveling pathway **(C)** would be determined by the dynamics of play on the field.

18. For forehand and backhand volleys in tennis, which of the following techniques leads to a pivot on the back foot and a step toward the net, thus allowing a player to contact the ball in front of the body?
- A. pointing the dominant elbow toward the opponent during the swing
  - B. bending the knees and keeping the back vertical
  - C. turning the shoulders early in preparation for the swing
  - D. rotating the racquet clockwise so the palm is on top of the racket

**Correct Response: C.** Turning the shoulders early in preparation for a tennis swing helps a player execute the movement known as the pivot and shoulder turn or unit turn, in which the body turns sideways as a unit. For example, in preparation for a forehand, a player begins to turn the shoulders sideways, pivots with the outside foot, and transfers weight to the outside foot. This opens up the hips, making it easier to finish turning the shoulders, and moves the tennis racket back. Because the shoulder turn initiates the backswing, the arms should not be working to get the racket back at this point in the forehand. The movements described in **A**, **B**, and **D** would not contribute to or directly lead into a pivot and shoulder turn.

19. In a physical education activity, elementary students work in pairs with a ball. First, partners face each other a few feet apart and gently toss the ball back and forth. Then the partners gradually move farther and farther apart, throwing and catching the ball until they are too far apart to throw or catch the ball successfully. This activity is most likely designed to promote student understanding of which of the following concepts?
- A. level
  - B. speed
  - C. range
  - D. pathway

**Correct Response: C.** Range refers to the distance an object is thrown. As the students move apart in this scenario, they are asked to increase the range of their throws. They learn that throwing "hard" or with more effort or force results in greater range or distance than tossing or throwing "soft." Although students may throw at about the same level or height (**A**), with the same approximate speed of movement (**B**), and along the same (straight) pathway (**D**), they need to adjust the force, effort, or energy with which they throw to increase the range of their throws.

20. Which of the following principles best describes why individuals with large body builds tend to excel at physical activities that require a great degree of stability?
- A. Larger body segments tend to produce more force than smaller body segments.
  - B. Muscles with large cross-sectional areas can produce more force than smaller muscles.
  - C. A body's inertia, or resistance to change in a state of motion, is proportional to body mass.
  - D. A body in equilibrium can be either stationary or moving at a constant speed in a given direction.

**Correct Response: C.** Inertia is the resistance to changes in motion. Inertia is proportional to the mass of the body, hence, the bigger the mass or larger the body size, the greater its resistance to being moved. An individual with a larger body type tends to have greater stability than an individual with a sligher body type. The force that can be produced by the muscles of larger body segments **(A)** or by larger muscles **(B)** would be more relevant to creating power or movement rather than stability. The principle of equilibrium **(D)** is equally applicable to individuals of all body builds.

21. An isometric muscle action is characterized by the production of force:
- A. as a muscle lengthens due to extension of a joint.
  - B. through movement generated in opposition to the downward pull of gravity.
  - C. as a muscle shortens due to flexion of a joint.
  - D. through tension and muscle contraction without movement.

**Correct Response: D.** When a muscle exerts force with no change in muscle length or in the angle of a joint to which it connects, it remains static and is in isometric contraction. Pushing against a wall, holding a heavy object above one's head, or staying in the up position of a push-up are examples of isometric exercises. A movement that lengthens a muscle due to extension of a joint **(A)** is an eccentric action, and a movement that increases tension on a muscle as it shortens due to joint flexion **(C)** is a concentric action. When movement is generated in opposition to gravity **(B)**, the muscle action would be either eccentric or concentric, not isometric.

22. When a baseball or tennis player swings a bat or racket, the greatest amount of force will be delivered to the ball at impact when:
- A. the player avoids stretching the shoulder muscles during the backswing.
  - B. the angular velocity of the swinging implement is as fast as possible.
  - C. the player reduces the speed of the strike just before impact with the ball.
  - D. the linear motion of the swinging implement remains level throughout the strike.

**Correct Response: B.** The momentum of the bat or racket as a player swings it is its angular velocity, and the greater the angular velocity, the greater the force delivered. Ideally, the bat or racket should reach maximum angular velocity immediately before contact with the ball. Force is diminished if a player decreases the distance of the rotational movement used in the swing. A preparatory action, or windup, is used to lengthen the distance of movement. Not allowing the shoulder to stretch back into the windup or backswing (**A**) would shorten the swing and diminish its force. Similarly, reducing the speed of the strike just before impact (**C**) would reduce the velocity of its movement and, thus, its force. The linear motion of the swinging implement (**D**) is more likely to influence the direction in which the ball is hit than the force applied to it.



23. During a backhand disc throw, keeping the back of the hand parallel with the ground and releasing the disc flat rather than at an angle are techniques used to:
- A. generate an S-shaped pathway.
  - B. make the disc fly farther.
  - C. generate a sudden drop at the end of the flight.
  - D. make the disc skim the ground.

**Correct Response: B.** A disc that is positioned parallel to the ground and released in a flat line along that trajectory uses the momentum of the throw in a straight line, which causes it to fly farther. The angle at which it is held and released shapes the trajectory of its movement. To skim the ground (**D**), it would be most important to release the disc at a low level held at a slight upward angle to keep it from hitting the ground. To create a curved throw, the disc is held and released with one edge tilted up; an S-shaped pathway is unlikely to be generated (**A**). A sudden drop (**C**) might be created if the throw lacks sufficient spin from the wrist, which would cause it to wobble.

24. During an adolescent growth spurt in which a student's arms and legs grow longer, the proportion of limb-to-torso-length often changes, resulting in:
- A. significant increases in joint flexibility.
  - B. periods of poor coordination and balance.
  - C. significant decreases in connective tissue elasticity.
  - D. immediate improvement in technical skill and control.

**Correct Response: B.** As the proportion of limb-to-torso length changes during an adolescent growth spurt, coordination and balance can become more challenging because the body's center of gravity shifts, and muscles and tendons may not develop as quickly as limb (long bone) length. Muscles and tendons that are stretched by rapid bone growth tend to be tight and inflexible, and joint flexibility would temporarily decrease rather than increase **(A)**. Technical skill tends to improve after musculature and proprioception have adjusted to the changes in bone structure, so immediate improvements in skilled performance would not occur **(D)**. Growth in the length of connective tissues does not always keep up with rapid bone growth, which may contribute to temporary declines in flexibility, but connective tissue does not lose elasticity as a result of bone growth **(C)**.

25. One important reason why a toddler learns to run several months after learning to walk is because in comparison to walking, running:
- A. is a complex motor skill rather than a fundamental motor skill, and thus requires refinement.
  - B. is less stable and requires development of greater motor control and coordination.
  - C. requires one foot to be always in contact with the ground, which is difficult for toddlers to master.
  - D. involves supporting body weight in all phases, and thus requires additional strength.

**Correct Response: B.** Running is a locomotor skill that is an extension of walking. After toddlers learn to walk, they naturally want to move faster and progress to running. In running, the body should lean slightly forward, both feet should temporarily come off the ground in a stride position, and the arms should move quickly in a forward and backward swinging motion in opposition to the feet. The legs extend farther than they would in a walking step. Hence, running is less stable and requires greater body control and coordination than walking. Running is considered a fundamental motor skill rather than a complex motor skill **(A)**. The flight phase of running involves both feet, not just one foot, leaving the ground temporarily **(C)**, and during the flight phase, body weight is propelled rather than supported **(D)**.

26. A student who claps twice in an even rhythm to each beat of a four-beat measure of music is marking the:
- A. upbeats.
  - B. quarter notes.
  - C. downbeats.
  - D. eighth notes.

**Correct Response: D.** In a four-beat measure of music, each beat is a quarter note, or one-quarter of the whole note that constitutes the full measure. A student who claps twice on each beat divides the quarter note in two, into eighth notes. Clapping on the quarter notes **(B)** uses one clap per beat. Clapping on the upbeat **(A)** or downbeat **(C)** uses one clap every four beats because the upbeat is the last beat in a measure and the downbeat is the first beat in a measure.

27. Once students demonstrate mastery of fundamental skills for rhythmic movement, it would be most appropriate to introduce them next to which of the following styles of dance?
- A. freestyle dance
  - B. modern dance
  - C. contra dance
  - D. line dance

**Correct Response: D.** Once students have learned to move rhythmically in place and with simple changes in direction, levels, and pathways, they can more easily learn to apply those skills to a line dance. Line dances use relatively straightforward movements, involve repeating series of steps, and do not require students to coordinate movement with a partner. Modern dance **(B)** and contra dance **(C)** are more complex forms of dance. Modern dance involves specific movement techniques and styling, with complex choreography, and contra dance requires students to coordinate their movements with a partner while responding to called movement patterns that they have memorized. Asking students to freestyle dance **(A)** does not provide them with as clear a structure for their movements or focus for learning as line dancing does.

28. To introduce students to the rhythmic use of locomotor skills, it would be more appropriate to design patterns that include hopping rather than patterns that include skipping because hopping:
- A. is a quieter, more controlled movement than skipping.
  - B. can be done in any direction, while skipping can move only in the direction of the leading foot.
  - C. involves one count and skipping involves two counts.
  - D. is more likely than skipping to be included as a movement in various dance forms.

**Correct Response: C.** With one count of movement, hopping is a more simple movement than skipping and enables students to learn to move with each beat when they are first being introduced to rhythmic locomotor movement. A skip involves a forward step and a hop in an uneven rhythmic pattern, and although it is more complex than hopping, changes in direction are possible (**B**). Both hopping and skipping can be executed as small, quiet, and controlled movements (**A**) or as larger, more energetic movements and both may be included as movements in many dance forms (**D**).

29. During a folk-dance unit, which of the following would be most important to include at the beginning of any practice session?
- A. a discussion of each student's personal challenges
  - B. demonstration and practice of the most difficult steps
  - C. a review of a videotape of the routine as performed in the last practice session
  - D. exercises and stretches to warm up muscles and joints before working on the routine

**Correct Response: D.** Any dance activity should be preceded by a warm-up session to prepare students' bodies for movement and help reduce the risk of injury. A warm-up increases heart rate, body temperature, and blood flow to muscles and connective tissues, which become more flexible and less likely to tear. Discussing individual students' challenges (**A**), demonstrating and practicing difficult steps (**B**), and reviewing a video of a previous practice session (**C**) are all useful activities for student learning, but can be incorporated into lessons at other, often more appropriate, times. These strategies are not as important to student safety as is warming up before the folk dance activity.

30. A group of fourth-grade students are learning a creative movement pattern in which they form a line and perform a forward roll simultaneously. Each time they execute the roll, one particular student rolls in a crooked line and bumps into a neighbor. To address this problem, it would be most appropriate for the teacher to:
- A. ask the student to remain after class so that the teacher can assess the student's attitude.
  - B. observe the student's roll to assess movement technique and provide individualized instruction.
  - C. change the choreography to create larger spaces between students when they execute the roll.
  - D. substitute an easier movement for the roll so all students will feel successful performing the routine.

**Correct Response: B.** Improper movement technique is most likely the cause of the crooked roll, rather than the student's attitude **(A)**, and the teacher's first response should be to assess the student's technique and provide individualized suggestions and assistance to help the student execute a skilled forward roll. Changing the choreography **(C)** may prevent bumping, but will not help the student roll in a straight line. Learning to roll correctly will provide the student with a greater feeling of success than reducing expectations for everyone **(D)**.



31. Before introducing students to the basic steps used in an ethnic social dance, a teacher shows them a video of a performance featuring the dance that begins with a narrator outlining the story the dancers perform. The narration will most likely enhance students' understanding of dance as:
- A. artistic and aesthetic expression.
  - B. movement that can convey meaning.
  - C. an expression of personal feelings.
  - D. an important part of theatrical productions.

**Correct Response: B.** An important concept related to dance is that movement creates and communicates meaning; dances are often created to convey stories. A narration that explains the story conveyed in the dance would enhance students' understanding of this concept as they watch the performance. Understanding of artistic and aesthetic expression in dance (**A**) would most likely be best promoted by discussing principles of design. Discussing choreographic differences would be more likely to promote an understanding of dance as an expression of personal feelings (**C**). The role of dance in theatrical productions (**D**) would probably be best explored in the context of a theatrical performance.

32. Which of the following is a critical element of the ready position in badminton?
- A. holding the racket down
  - B. standing with knees locked
  - C. holding the racket up
  - D. standing with weight on heels

**Correct Response: C.** As a badminton player prepares for an opponent to strike the shuttle or birdie, the player should have the racket up, held out to the front away from the body, and never angled down **(A)**. The exact height depends on the conditions of play. The player should be in ready position, with feet apart and knees slightly bent, rather than locked **(B)**. The player's weight should be forward on the balls of the feet, rather than on the heels **(D)**, in order to move quickly.

33. During a basketball activity, students work in pairs. Each student has a ball and faces his or her partner from several feet away. As one partner makes a two-handed chest pass, the other partner simultaneously makes a bounce pass. After a while, they switch passes. Which of the following is most likely the main objective of this activity?
- A. developing skills in passing
  - B. practicing pick and roll skills
  - C. developing offensive footwork while passing
  - D. practicing passing around a defender

**Correct Response: A.** In this paired activity, students are working on passing skills, which are critical to successful performance in basketball. In games, the two-handed chest pass is often used as an outlet pass following a rebound, when passing from out-of-bounds, or when moving and passing off a dribble. To execute the skill, a student extends the arms forward, takes one step toward the intended receiver, and snaps the wrists on the release. The one- or two-handed bounce pass is performed in a similar way except body weight is lowered and transferred forward as the floor becomes the initial target. The basketball should hit the floor about two-thirds to three-quarters of the distance from the passer and "skip" into the receiver's hand. The pick and roll (**B**) and passing around a defender (**D**) would most likely involve practicing with defenders in drills or small-sided games. Developing offensive footwork while passing (**C**) is not in and of itself a main objective of the activity described.

34. Which of the following cues correctly describes a critical element of the two-handed side-arm strike used to bat a ball?
- A. "Grip the bat so that your dominant hand is below your non-dominant hand."
  - B. "Transfer your weight from your back foot to your front foot as your hips and shoulder rotate into the swing."
  - C. "Hold the bat in front of your shoulder and keep your batting elbow perpendicular to the ground."
  - D. "Keep your batting elbow flexed during the entire swing and stop the follow-through at the point of contact."

**Correct Response: B.** In a well-executed two-handed side-arm strike, weight is transferred from the back foot to the front foot as the hip and shoulder begin to rotate. As the body rotates, the bat is brought forward to strike the ball. To help control the swing, the bat is gripped with the dominant hand above the non-dominant hand, not vice versa **(A)**. The bat should be held behind, not in front of, the dominant shoulder and the dominant elbow should be parallel, not perpendicular, to the ground **(C)**. As the swing is executed, the arms extend through a straightening, rather than a flexed, elbow **(D)**, and follow through past the point of the strike until the dominant shoulder moves to a position under the chin.

35. Which of the following is a fundamental rule of field hockey and indoor floor hockey?
- A. Follow-throughs may rise above waist level to chest height.
  - B. Players must keep only one hand on the stick at all times.
  - C. Excessive body contact or stick-to-stick contact is not allowed.
  - D. Players may kick or advance the ball or puck with any part of the body.

**Correct Response: C.** In physical education, field hockey and floor hockey are not considered contact sports. Excessive body contact, such as body checking or slashing (striking with a stick), is not allowed, and heavy stick-to-stick contact is also a violation. In floor hockey, a player may not raise the stick above the waist. Short, low follow-throughs are recommended after contact with the puck or ball; high follow-throughs present risk of injury to other players **(A)**. Players may use one or two hands to manipulate the stick **(B)**. The puck or ball may be blocked (not caught) by use of a foot or hand (if airborne), but may only be advanced by the stick in field hockey **(D)**.

36. Which of the following practices is most likely to lead to a dangerous outcome in competitive sports activities in which some physical contact might occur?
- A. coaching students in a variety of offensive and defensive strategies during game play
  - B. pairing students or forming teams in which one student or one team is bigger, stronger, or more skilled than the other
  - C. modifying regulation playing field and court dimensions
  - D. rotating students among different playing positions, including from offensive to defensive positions and vice versa

**Correct Response: B.** When physical contact or accidental collisions might occur in competitive sports, participants should be approximately matched according to height, weight, and skill or ability level. This strategy enhances student safety and decreases risk of injury. Coaching students in effective strategies to use during game play is desirable and unlikely to lead to dangerous outcomes **(A)**. Modifying a regulation playing field or its court dimensions is not inherently dangerous **(C)** and is commonly used for small-sided games and to accommodate students' skill levels. Rotating players among different positions allows students to experience a variety of gamelike conditions and practice both offensive and defensive skills; this strategy does not create undue risk **(D)**.

37. Which of the following competitive sports is particularly appropriate for promoting cooperation, honesty, and trust within and between teams because of its emphasis on the "spirit of the game" and self-refereeing?
- A. touch rugby
  - B. team handball
  - C. slow-pitch softball
  - D. ultimate

**Correct Response: D.** Ultimate is played with no official referees; mutual fun and reliance on the sportsmanship of participants to maintain fair play in the "spirit of the game" are fundamental to the game. Players make their own foul and out-of-bounds calls and are responsible for adhering to a few important rules. Thus, the game inherently promotes camaraderie, mutual support, cooperation, honesty, and trust among players. A referee, coach, or teacher usually helps monitor play in touch rugby **(A)** and team handball **(B)** and an umpire, coach, or teacher usually helps oversee play in slow pitch softball **(C)**.

38. Which of the following characteristics is most important in functioning effectively as a natural leader and positive role model in sports and physical education activities?
- A. the ability to talk others into a particular course of action in an intentional way
  - B. a view of leadership as a process for working with problems that need to be solved
  - C. the belief that there are right and wrong responses in each situation and intervention is often necessary
  - D. the ability to influence a group toward a particular goal in a nonjudgmental, collaborative way

**Correct Response: D.** In physical education, an effective leader should be a positive role model and committed to the belief that everyone has something to contribute to achieving a shared goal. By encouraging acceptance, teamwork, and effort, and modeling these behaviors through words and actions, a leader can establish a supportive, collaborative, and inclusive climate in which the strengths and talents of individuals are respected and optimized. Creating an atmosphere of encouragement and teamwork is more effective than using persuasion **(A)** in producing positive results, and encompasses leadership abilities beyond solving problems **(B)**. Part of a nonjudgmental perspective is the recognition that there are not always right or wrong responses in every situation **(C)**.



39. After a few lessons in the fundamentals of bowling, students practice at a bowling alley on a field trip. After the students select balls, the teacher reviews basic bowling skills with the students. Which of the following skills should be reviewed *first* in the sequence of skills?
- A. learning to roll a hook ball
  - B. learning the five-step approach
  - C. rolling a straight ball
  - D. choosing a grip that is comfortable

**Correct Response: D.** Encouraging student bowlers to use a grip that is comfortable and places no strain on the fingers, thumb, or hand helps establish the foundation for effective development of other bowling skills and reduces the risk of injury. Because there are a few variations that affect control, release, and power, students should develop a grip that provides them with the confidence and security suited to their experience and skill level. Once a comfortable, secure grip is established, students can work on a four- or five-step approach **(B)**, and aiming and rolling a straight ball **(C)** or a hook ball **(A)**.

40. Which of the following precautions is most important in preventing blisters while hiking?
- A. keeping cool on hot days to prevent feet from sweating
  - B. wearing two pairs of socks so no air circulates next to skin
  - C. remaining hydrated and warming up before hikes on cold days
  - D. wearing sturdy, proper-fitting hiking shoes that have been broken in

**Correct Response: D.** The most important gear for hiking is a pair of sturdy hiking shoes that fit properly and are broken in so they do not rub on parts of the feet and ankles and cause blisters. Blisters are caused by pressure and friction against the skin from boots and socks, so the best protection is footwear that does not irritate the skin. Because blisters are more likely to emerge when feet are warm and moist, it can help to stop periodically and remove footwear to cool and dry the socks and feet **(A)**, but this strategy will not guard against ill-fitting footwear that rubs the skin. Lack of air circulation **(B)** is more likely to exacerbate, rather than prevent blisters, and, while hydration and a proper warm-up **(C)** are critical for injury prevention on hikes, they are not factors in the formation of blisters.

41. Bicyclists can best ensure that they are visible to motorists during daylight hours by:
- A. wearing bright or fluorescent-colored clothing.
  - B. attaching a battery-operated headlight to their bicycles.
  - C. wearing a white or light-colored helmet or jacket.
  - D. attaching a small flag to the rear of their bicycles.

**Correct Response: A.** Bright and fluorescent-colored clothing are the most eye-catching and likely to draw the attention of a motorist to the presence of someone on a bicycle during daylight hours. A headlight **(B)**, effective at night, provides only a small spot of light during the day and no visual protection from behind. A white or light-colored jacket or helmet **(C)** is not as visible as more brightly colored clothing and may not be as easily distinguishable from a light-colored background. A small flag **(D)** will not be as noticeable as a bicyclist's full torso clad in a bright color.

42. In an outdoor education curriculum, which of the following practices is most likely to help students develop an ethic of stewardship toward the natural environment?
- A. instructing students how to pack as lightly as possible for hikes and camping trips
  - B. familiarizing students with the locations of national parks, wildlife refuges, and forests in their region
  - C. teaching students Leave No Trace principles and how to apply them in any outdoor setting
  - D. arranging to have students participate in annual National Public Lands Day activities

**Correct Response: C.** The Leave No Trace principles, established by the Center for Outdoor Ethics, have been widely adopted by many outdoor and wilderness organizations and curriculums to create an ethical awareness that helps ensure the sustainability of outdoor recreation. The principles address safety (preparing for extreme weather, minimizing and completely extinguishing campfires), proper disposal of waste (pack it in, pack it out), preservation of the natural environment (leaving plants and other natural objects as is), respecting wildlife (observing animals from a distance, controlling pets), and other aspects of stewardship. Light packing **(A)** may help reduce the likelihood of leaving inappropriate materials in natural areas, but stewardship also involves many other dimensions of interaction with the environment. Familiarizing students with locations of parks, refuges, and forests **(B)** and having students participate in National Public Lands Day activities **(D)** is likely to increase student awareness of outdoor recreational opportunities and the importance of resources in public lands, but these activities do not directly address the goal of helping students develop an ethic of stewardship toward the natural environment.

43. Which of the following techniques should be used by a belayer to ensure the safety of a climber during indoor rock climbing?
- A. signaling to the climber each time the climber should move up the wall
  - B. maintaining some slack in the climbing rope at all times
  - C. keeping the brake hand in the "lock off" position when there is no slack or movement by the climber
  - D. maintaining a secure position beneath the climber and as close to the wall as possible

**Correct Response: C.** In indoor rock climbing, when a belayer is not taking in slack, the belayer's brake hand should always hold the rope in the locked position below the belay device with the hand at the belayer's hip to ensure immediately braking if the climber begins to slip or fall. Communication is essential, but the climber, not the belayer, decides when it is safe to climb, once the "belay on" signal is given **(A)**. Maintaining slack at all times or excess slack in the rope **(B)** is dangerous as it allows momentum to build on a slip or fall before the rope catches the climber. The belayer's position below the climber **(D)** may assist with supporting the climber's weight but in itself is not enough to brake a fall.

44. Involving students in outdoor education courses such as orienteering, canoeing, hiking, and rock climbing is particularly effective for promoting students' self-esteem, because the activities include built-in opportunities to:
- A. block out distractions completely and become meditative.
  - B. experience a sense of accomplishment in reaching a goal or destination.
  - C. enjoy time on one's own and focus on the body mechanics of the activity.
  - D. attempt to set personal best records each time one participates.

**Correct Response: B.** Orienteering, canoeing, hiking, and rock climbing in various ways involve a process of working toward and reaching a destination or shared goal, which provides an immediate sense of accomplishment or achievement to participants. In turn, this builds self-confidence and self-esteem. Outdoor activities are more likely to promote awareness of and involvement with the environment in which they take place rather than the opportunity to block out distractions. Although such activities may be meditative, remaining aware is essential for safety **(A)**. Time on one's own or working on body mechanics **(C)** can be satisfying, but are not as connected to the development of self-esteem as is achieving a goal. While the outdoor activities described may offer discreet experiences or opportunities to excel, they do not easily lend themselves to precise measures that can be compared to previous results **(D)**.

45. According to principles of developmental psychology, which of the following best describes why participation in play activities is particularly important to young children's growth and development?
- A. Virtually all of what children learn is derived from observing others, thus young children learn how to behave by observing older children at play.
  - B. Play settings provide the environments in which children develop the ability to overcome confusion related to appearance versus reality.
  - C. Since play provides important information about gender roles, children with limited opportunities to play often experience delayed development of gender identity.
  - D. Play allows children to try out and test new physical, cognitive, and social behaviors, which then become part of their working memory.

**Correct Response: D.** Play provides young children with a way to engage and interact with the world and with others. It gives them opportunities to explore and try out or practice cognitive, physical, and social behaviors that are important to their personal growth and development. While play can provide children with information about how to behave (**A**), cultural gender roles (**C**), and differences between appearance and reality (**B**), its particular importance is in the multiple opportunities it provides for exploring, experiencing, and internalizing the many dimensions of life skills.

46. Which of the following approaches is likely to be most effective in fostering appropriate attitudes about body composition and body image in children?
- A. emphasizing that individuals come in a variety of sizes and shapes within a range of healthy body weights
  - B. encouraging children to adopt the eating patterns and dietary choices favored by their family and culture
  - C. instructing children how to determine their body mass index and encouraging them to check it often
  - D. promoting children's ability to identify and compare variations in individual fitness levels among classmates

**Correct Response: A.** Individuals with healthy attitudes about body image and composition recognize that there is not one ideal body shape or size, but that humans beings have a variety of body shapes and sizes and a range of healthy body weights. Encouraging children to measure and regularly check their BMI **(C)** or compare their fitness levels and variations to those of others **(D)** may cause or increase anxiety about body composition and body image. Encouraging healthy eating patterns is important for achieving healthy levels of body composition, but family and culture-based dietary practices **(B)** vary and may not always include optimal nutritional choices.



47. During an outdoor field day at the end of the school year, elementary students will participate in a variety of physical activities. Which of the following organizational approaches to the day's events is likely to be most effective in enhancing students' self-esteem and sense of self-worth?
- A. ensuring that most activities emphasize coordination and balance rather than speed or strength
  - B. offering activities that allow students of varying fitness and skill levels to achieve individual success
  - C. including only activities that are cooperative rather than competitive in nature
  - D. recruiting responsible students and relying on them to help staff and run the activities

**Correct Response: B.** Providing each student with opportunities to have fun and experience personal success should be the primary goal of field days. Organizing a wide variety of activities and allowing students to choose activities in which to participate is very likely to promote feelings of self-esteem and self-worth because students can play to their interests and strengths, and challenge themselves in a safe environment. Because any group of students will demonstrate a range of skill-related fitness attributes, activities that focus on one or two specific attributes, such as balance and coordination (**A**), will not suit all students. Similarly, offering only cooperative activities, rather than a mix of cooperative and competitive activities, limits students' choices (**C**). While using student helpers (**D**) may promote the helpers' self-esteem and self-worth, this approach does not address the general population of field day participants.

48. Cooperative games and team sports help promote the development of positive traits and values primarily by providing opportunities in which students can:
- A. study and emulate the interpersonal skills of a variety of adult role models.
  - B. compete against themselves rather than against other individuals.
  - C. remain confident and free of worries about the possibility that peers may make fun of them.
  - D. observe and practice character-building skills such as determination, loyalty, self-control, and civility.

**Correct Response: D.** Working together in cooperative games and team sports encourages individuals to practice skills important to teamwork, such as loyalty, self-control, and civility, and can encourage determination and dedication to a group's effort or goal. Such activities are about competing as a team, not as an individual **(B)**, but some students may still be concerned about being judged by fellow team members or members of another team **(C)**. As these are student activities, few adults are involved to act as role models **(A)**.

49. Recreational group and team games such as horseshoes, ultimate, and volleyball are especially well suited to providing social benefits to participants primarily because they:
- A. keep participants of all fitness levels equally challenged.
  - B. require participants to take turns self-officiating.
  - C. promote enjoyment and camaraderie among participants with similar interests.
  - D. involve competition and scoring, thus generating comments and discussions among participants.

**Correct Response: C.** Social benefits would most likely emerge from interaction over shared interests, such as the enjoyment of an activity, the camaraderie developed by working together as a team, and mutual enjoyment of success or joking about mistakes. Played as recreational games, these activities tend to be more lighthearted than formal competitive sports. Aspects such as the challenge of maintaining fitness levels appropriate for play **(A)** and the integrity involved in self-officiating **(B)** are more individually than socially focused, and discussion of competition and scoring **(D)** is more likely to involve formal communication than social interaction.

50. Following a track meet against a rival team, a student and the physical education teacher discuss the 200 meter. "I can't believe I didn't place first in the 200! I trained so hard during the last two weeks," the student says. "Sorry to see you so disappointed. I know that race was really important to you," the teacher replies. This response is appropriate in this situation primarily because it:
- A. provides an objective overview and downplays the loss.
  - B. expresses admiration for the student's performance in the race.
  - C. affirms that the student set a goal and worked hard.
  - D. acknowledges that the teacher knows exactly how much time the student spent preparing for the race.

**Correct Response: C.** The teacher's response communicates to the student that the teacher recognizes the importance of the race from the student's perspective. The response is empathetic and supportive, not an objective assessment of the race **(A)**, and speaks to the student's goals and attitude rather than the student's performance **(B)** or the specifics of time and effort that the student put into training **(D)**.

51. An individual performs three sets of curls with the same weights four days a week to strengthen the biceps. This best illustrates which of the following principles of training?
- A. the principle of specificity of exercise
  - B. the principle of progression
  - C. the principle of reversibility of training effects
  - D. the principle of recuperation

**Correct Response: A.** Training adaptations are highly specific to the type of exercise performed. According to the principle of specificity, an exercise must stress the specific physiological system in which improvement is desired (e.g., a specific muscle group, the aerobic pathway). In this case, the biceps are the focus. The principle of progression **(B)** states that as improvements are made, the amount of effort must progress to higher levels to continue achieving improvements in strength and endurance. The principle of the reversibility of training **(C)** states that if a training program is not maintained the level of fitness will decline. The principle of recuperation **(D)** states that a period of rest is necessary for the body to recover from a hard workout in order to achieve optimal training adaptations.

52. Which of the following best describes how the principle of progressive overload should be applied in a variable-resistance training program designed to develop muscular endurance rather than strength?
- A. increasing the weight the muscles are required to resist over time
  - B. gradually increasing the number of repetitions of resistance exercises
  - C. decreasing the duration of rest intervals between different resistance exercises over time
  - D. gradually decreasing the length of time between resistance training sessions

**Correct Response: B.** According to the overload principle, a student must keep working harder using a systematic progression in the intensity of training activities to continue making gains in strength, endurance, and power. Gradual increases in the number of repetitions in muscular fitness training will result in greater endurance. Increasing the weight used in an exercise **(A)** will contribute primarily to gains in muscular strength. Decreasing the duration of rest intervals between exercises **(C)** or the length of time between training sessions **(D)** is more likely to impede muscle recovery and inhibit adaptations to training.

53. In recent decades, rates of physical activity among U.S. children and adolescents have declined while rates of sedentary activity and poor dietary practices have increased. Among U.S. youth, this trend has led to a dramatic rise in:
- A. the incidence of obesity-related diseases.
  - B. visits to hospital emergency rooms due to injuries sustained at home.
  - C. the prevalence of vitamin-deficiency diseases.
  - D. the occurrence of sleep disorders and fatigue-related ailments.

**Correct Response: A.** A decline in the activity levels of youth accompanied by poor dietary habits has contributed to what is considered an epidemic of obesity in the United States in the early twenty-first century. The result is an increased incidence of obesity-related diseases, such as diabetes and cardiovascular disorders. Inactivity and obesity are not specifically connected to an increased risk of injury **(B)**, vitamin deficiencies **(C)**, or sleep disorders **(D)**.

54. Which of the following health risks is most closely associated with inactivity and a poor fitness level?
- A. migraine headaches
  - B. high blood pressure
  - C. susceptibility to infection
  - D. nerve degeneration

**Correct Response: B.** High blood pressure is a fairly common negative adaptation of body systems to poor fitness levels related to the cardiovascular system. The specific causes of migraines (**A**) are not well understood, but poor fitness does not appear to be a significant factor in triggering the headaches. Susceptibility to infection (**C**) generally indicates a weakened immune system, and nerve degeneration (**D**) may be genetic or caused by environmental factors.



55. Exercise is generally an important part of treatment plans for people with diabetes because physical activity helps:
- A. protect the insulin-producing cells of the pancreas.
  - B. reduce the build-up of glucose in the blood.
  - C. eliminate urinary problems associated with diabetes.
  - D. prevent diabetes-induced changes in vision.

**Correct Response: B.** Insulin is needed by the body to metabolize glucose, and high-glucose levels in type 2 diabetes occur when body cells become less responsive to insulin. Inactivity is a primary cause of this insulin resistance. With physical activity, insulin sensitivity or uptake can be improved, contributing to a reduction of blood glucose levels. Type 2 diabetes allows for sufficient production of insulin (**A**), but body cells have become resistant to it. Urinary and vision problems, (**C**) and (**D**), are possible symptoms of diabetes, rather than underlying causes.

56. The activity patterns of five- and six-year-old children are likely to be more physically demanding than the activity patterns of younger children mainly because of improvements in:
- A. gross-motor skills.
  - B. cardiorespiratory function.
  - C. manipulative skills.
  - D. involuntary reflexes.

**Correct Response: A.** Due to the general pattern of skeletal, muscular, and brain growth and brain development, by the age of five or six children develop increasing facility with gross-motor skills that enable them to participate in more complex and demanding physical activities, such as running, jumping, twisting, and turning. Improved motor control and gains in strength, coordination, and balance support and motivate children's participation in increasingly more demanding activity patterns. Cardiorespiratory capacity is still somewhat limited mechanically at this age **(B)**. Manipulative skills **(C)** are generally small-muscle actions that are less relevant to demanding physical activity patterns than large-muscle actions (gross-motor skills), and involuntary reflexes **(D)** are typically isolated responses to a stimulus rather than patterns of activity.

57. Vigorous cardiorespiratory fitness activities should be followed by cool-down and stretching activities in order to:
- A. trigger a final surge in metabolic rate before the body reverts to a resting state.
  - B. prevent a sudden reduction in carbohydrates and glucose levels in the body.
  - C. trigger a decrease in the level of growth hormone in the body.
  - D. prevent muscle soreness and blood pooling in the extremities.

**Correct Response: D.** After vigorous exercise, a cool down gradually reduces the intensity of movement, which aids in maintaining the flow of blood back to the heart for recirculation and keeps blood from pooling in the lower limbs. Muscles that are warm from exercise are in an optimum state for effective stretching, which may decrease the buildup of lactic acid and help prevent muscle cramping and stiffness. A cool down would gradually slow the metabolic rate (**A**) and does not significantly affect carbohydrate and glucose levels (**B**) or growth hormone levels (**C**).

58. Which of the following physiological changes is most likely to occur after several weeks of regular participation in cross-training activities such as swimming and jogging?
- A. improved ratio of high-density lipoproteins (HDLs) to low-density lipoproteins (LDLs)
  - B. increased number of skeletal muscles
  - C. decreased deposition of minerals into bone matrix
  - D. increased length of long bones and decreased length of tendons attached to long bones

**Correct Response: A.** Regular aerobic physical activity helps lower the levels of low-density lipoproteins (LDLs), the "bad cholesterol," and increase the levels of high-density lipoproteins (HDLs), the "good cholesterol." HDLs help the body to move fatty deposits to the liver for disposal. Aerobic activity may increase muscle size if load is increased, but not the number of skeletal muscles, which do not change **(B)**, nor the length of bones and tendons **(D)**, which are determined primarily by human biology. Bone length can also be influenced by nutrition. Mineral deposition to bone **(C)**, such as calcium absorption, is a result of bone growth processes and nutrition.

59. Which of the following best describes a physiological adaptation that results from regular aerobic exercise training?
- A. There is an increase in the maximum number of times the heart beats per minute.
  - B. The structure of the respiratory system is altered, causing beneficial changes in respiratory function.
  - C. The body is better able to produce energy from fat stored as triglycerides.
  - D. There is an increase in the percentage of fast-twitch muscle fibers in the body.

**Correct Response: C.** When carbohydrate levels are depleted during exercise the body oxidizes fat, which is stored as triglycerides in fat cells, for energy. With regular aerobic training the body becomes more efficient in utilizing the stored fats. With regular aerobic training, the heart becomes stronger and more efficient and does not need to beat as frequently to meet circulatory needs, hence there is no increase in maximum heartbeats per minute **(A)**. Lung structure is not altered with training **(B)**. Muscle-fiber composition is largely genetically determined **(D)**, and studies indicate that potential changes in percentages of fast-twitch and slow-twitch fibers as a result of training are modest.

60. An individual who currently jogs outdoors for exercise would like to try a low-impact alternative. The individual wants an aerobic activity that would expend about as many calories as jogging, and that would also tone lower body muscles such as the thighs and buttocks. Which of the following activities would be an appropriate initial consideration?
- A. Pilates
  - B. jumping rope
  - C. bowling
  - D. inline skating

**Correct Response: D.** Inline skating can provide a good aerobic workout that focuses on toning lower body muscles. An individual skating at 20 miles per hour can burn 6 calories per minute or about 360 calories per hour. Pilates (**A**) and bowling (**C**) are generally less aerobic in intensity and expend fewer calories. Jumping rope (**B**) can provide an aerobic workout but also focuses heavily on upper body fitness.

61. While outdoors, young elementary students practice estimating their heart rate as they walk, then jog, and then run through a simple obstacle course. Each time they complete the course, the students check their pulse for a few seconds and describe it as either slow, medium, or fast. This activity is particularly effective for:
- A. familiarizing students with techniques for calculating respiration rates during aerobic activity.
  - B. promoting students' ability to distinguish between aerobic and anaerobic activity.
  - C. introducing students to basic cardiorespiratory fitness principles in the context of a physical activity.
  - D. encouraging children to improve their endurance and stamina in the context of a play activity.

**Correct Response: C.** In this movement activity, students gain firsthand experience in estimating and feeling for their heart rate (via a pulse check) before and after they engage in activity of varied intensity levels: low (walking), moderate (jogging), and moderate-to-vigorous (running). Through this activity, students become familiar with some basic cardiorespiratory principles (e.g., physical activity increases heart rate, different activities have different intensity levels, individuals have control over intensity levels). Young elementary students are not yet developmentally ready to learn techniques for calculating respiration rates **(A)**. The scenario described does not include anaerobic activity, and at the lower elementary level, promoting the ability to distinguish between aerobic and anaerobic activity **(B)** or encouraging students to improve their endurance **(D)** is not developmentally appropriate.

62. Which of the following steps is most important to take *first* in selecting physical activities for inclusion in personal fitness plans?
- A. considering which types of activities are weather dependent and which are available year-round
  - B. determining the type of physical activities that one enjoys (e.g., competitive, group, individual, outdoors)
  - C. searching for organizations or recreation departments that offer exercise classes in one's community
  - D. estimating the costs associated with participating in different types of activities (e.g., equipment, fees, transportation)

**Correct Response: B.** A student who engages in physical activities that he or she finds enjoyable is much more likely to sustain participation and commitment to fitness goals, so the first step in selecting activities for a fitness plan is to carefully consider activities in terms of type and interest. After narrowing activity choices to those that one enjoys, an individual might consider activities in terms of weather or season (**A**), search for resources that offer exercise opportunities (**C**), or estimate the costs of potential participation in activities (**D**), but none of these strategies would be the most appropriate first step.



63. Which of the following types of fitness equipment is often an effective motivational tool because it helps track steps taken and distance covered while moving?
- A. heart rate monitor
  - B. elliptical machine
  - C. pedometer
  - D. bioelectrical impedance analyzer

**Correct Response: C.** A pedometer records the number of steps taken by the person wearing it and can be used to estimate distance covered based on the length of a person's stride. Pedometer users are often motivated to achieve a certain number of steps per day or to improve their daily average. A heart rate monitor **(A)** indicates only the rate at which the heart is beating, an elliptical machine **(B)** is an exercise machine that can be used to develop lower body strength and endurance, and a bioelectrical impedance analyzer **(D)** is commonly used for measuring body composition.

64. A female high school student is concerned about doing strength-training exercises in a fitness class. She tells the physical education teacher that she wants to be stronger, but not at the cost of developing large muscles. Which of the following is an accurate principle to include in a response to this concern?
- A. Toned muscles are necessary for gains in size and strength, so only females who begin training with well-defined muscles will develop larger ones.
  - B. Although training improves the weight-bearing capacity of bones and joints, it has little effect on the muscular strength of females.
  - C. Training promotes considerable gains in strength but only slight increases in muscle bulk because of females' low testosterone levels.
  - D. Only lower body training causes females to gain significant muscle bulk because their leg strength-to-weight ratios are higher than male ratios.

**Correct Response: C.** While resistance exercises and proper diet can contribute to increasing muscle strength and size, the hormone testosterone is required for significant growth in muscle mass. Females have lower rates of testosterone production than males, and so do not generally develop large muscle mass, even while they effectively train to increase muscle strength **(B)**, endurance, and tone. This is true, whether or not a female begins training with well-toned muscles **(A)**, or focuses on the lower body **(D)**.

65. Which of the following exercises would be most effective for developing core strength?
- A. push-up
  - B. biceps curl
  - C. abdominal curl-up
  - D. hamstring stretch

**Correct Response: C.** Abdominal curl-ups directly target the abdominal muscles that are engaged for core strength along with back, oblique, and other torso muscles. Executing a push-up correctly requires the use of a stable and engaged core, but the push-up targets upper body muscles more directly **(A)**. A biceps curl works the bicep in the upper arm **(B)**, and a hamstring stretch is used to increase flexibility in the back of the leg and buttocks **(D)**.

66. Which of the following types of fitness training is the best choice for an individual who wishes to improve overall muscle definition and tone?
- A. strength training with a moderate degree of resistance and a high number of repetitions
  - B. static stretching of major muscles and joints in which stretches are held for at least 30 seconds
  - C. variable-resistance training with heavy weights and a low number of repetitions
  - D. dynamic stretching involving sports movements in which reach, force, and speed are gradually increased

**Correct Response: A.** Improving muscle definition and tone begins with strengthening muscles. Muscle strength is the central component of a toned muscle, and using either a moderate degree of resistance and high number of repetitions or heavier resistance with fewer repetitions will increase muscle strength. The key to making tone and definition visible is body composition. Muscle definition and tone are more visible with a more lean body composition. While static and dynamic stretching, **(B)** and **(D)**, are important components of health-related fitness, they promote joint and muscular flexibility. Although training with heavy weights and few repetitions **(C)** improves muscular strength, it is less likely than **(A)** to improve overall definition and tone.

67. A straight-legged standing toe-touch is considered a high-risk exercise primarily because it:
- A. stretches cervical ligaments and increases cervical disk pressure.
  - B. increases pressure on lumbar disks and overstretches lumbar ligaments.
  - C. initiates the stretch reflex in the hamstrings, which leads to delayed localized muscle soreness.
  - D. uses the latissimus dorsi as a shoulder extensor, which hyperextends the shoulders.

**Correct Response: B.** A straight-legged standing toe-touch is considered a high-risk exercise and no longer recommended for students or adults. This forward bend with rounded back places undue stress on the lower back by excessively stretching ligaments that hold the vertebrae in place, thereby creating potential for both immediate and long-term injury to the lower back. Cervical ligaments are not at risk **(A)** unless the neck is hyperextended. A stretch reflex in the hamstring **(C)** would only be likely to occur with a bounced stretch, which is also unsafe. The shoulders are typically not hyperextended **(D)** during a standing toe-touch.

68. Which of the following strength training practices would most likely put an individual at risk for a muscle pull or strain?
- A. using static stretching rather than dynamic stretching to cool down after strength training
  - B. working lower body muscles on Mondays and Thursdays and upper body muscles on Tuesdays and Fridays
  - C. allowing muscles to rest for one or two days between strength training sessions
  - D. exercising a particular muscle group without working its opposing muscle group (e.g., quadriceps but not hamstrings)

**Correct Response: D.** One of the best ways to avoid injury during fitness training is to create and maintain muscle balance. If one group in a set of antagonist muscles is able to overpower another, it can torque and pull joints out of alignment. Static stretching is an important and effective part of a cool down, helping to keep blood circulating back to the heart and loosening muscles that have been worked **(A)**. Good training practice involves alternating the muscle groups that are worked on subsequent days **(B)** and allowing muscles that have been worked to rest and recover between workouts **(C)**.

69. Weight-bearing and strength training exercises are particularly appropriate activities for older adults concerned about:
- A. strengthening the lungs.
  - B. reducing the risk of heart disease.
  - C. increasing flexibility.
  - D. reducing the risk of fractures.

**Correct Response: D.** Weight-bearing and strength training exercises help build bone density and are important for older adults who may be at risk of osteoporosis. In addition to contributing to bone strength, these exercises improve muscle control, connective tissue strength, and balance, which can help prevent falls that are a major cause of broken bones in older adults. Regular aerobic exercise is most useful for strengthening the lungs **(A)** and reducing the risk of heart disease **(B)**. Flexibility is improved through stretching **(C)**.

70. Which of the following best describes two major functions of carbohydrates in the body?
- A. controlling fluid levels and ridding the body of wastes
  - B. repairing damaged cells and creating new ones
  - C. providing energy for cells and maintaining an energy reserve
  - D. regulating body temperature and controlling blood sugar

**Correct Response: C.** Carbohydrates are the primary source of energy for most body functions. Glucose, formed as the body breaks down carbohydrates, is used by almost all body cells for energy, and excess is stored by the body in fat cells to provide energy as needed. Water levels are maintained in the body **(A)** by the actions of mineral salts or electrolytes, such as sodium and potassium. Protein is important for new cell growth and repair of damaged cells **(B)**. Water and sodium are important for cooling the body temperature, and the sugars in excess carbohydrates can raise blood sugar levels **(D)**.



71. Which of the following Web sites provides access to an interactive, personalized system for assessing and monitoring one's current diet and physical activity levels on an ongoing basis?
- A. USDA ChooseMyPlate
  - B. Consumer Reports: Health
  - C. WebMD
  - D. Healthy People 2020

**Correct Response: A.** The USDA ChooseMyPlate.gov (formerly MyPyramid) website provides information and interactive software for planning, tracking, and analyzing diet and physical activity. The website is especially useful to students because its tools and recommendations can be customized according to gender, age, and activity level, and it includes topics, activities, and games geared specifically to children. Consumer Reports: Health analyzes and reports on a variety of health-related topics, including food, diet plans, and safety equipment **(B)**. WebMD provides information on a wide range of health topics, including diseases, treatments, and wellness strategies **(C)**. Healthy People 2020 (formerly Healthy People 2010) is a U.S. government website designed in large part to provide information to help communities and organizations develop programs to improve individuals' health and wellness **(D)**.

72. During which stage of growth and development are total daily caloric needs greatest?
- A. infancy
  - B. early childhood
  - C. adolescence
  - D. early adulthood

**Correct Response: C.** Total nutrient needs are higher during adolescence than any other time in the lifespan. During puberty, nutrient needs for both males and females increase sharply to keep up with changes in body composition and biology. Caloric needs during infancy, when the body is small, range from about 500 to 800 per day **(A)**. The growing bodies of adolescents require about 2200 calories per day for the average girl and about 3000 for the average boy. In early childhood, bodies are smaller and growth is slower than in the periods of development before and after **(B)**, and by early adulthood growth has slowed or stopped, so caloric needs decline **(D)**.

73. Which of the following nutritional areas should be of particular concern for children aged 9 to 14 years because of the bone growth and development that occurs in this age range?
- A. adequate fiber intake
  - B. adequate carbohydrate intake
  - C. adequate fat intake
  - D. adequate calcium intake

**Correct Response: D.** Ensuring adequate calcium intake is most important for creating healthy bones during all stages of life, but especially so during preadolescence and adolescence because of the rapid long bone growth and development that occurs during these stages. Fiber is important to digestive health **(A)**, carbohydrates are important for daily energy supplies **(B)**, and dietary fat is an important source of fatty acids, which assist in nutrient transport and energy supply **(C)**.

74. Body composition is a component of health-related fitness concerned primarily with the:
- A. absorption and use of nutrients by the body.
  - B. ability of the skeletal system to give shape to the body.
  - C. maintenance of bone mass in the body.
  - D. relative proportions of fat and lean tissue in the body.

**Correct Response: D.** Body composition refers to the ratio of fat mass to fat-free (or lean muscle) mass, specifically the proportion or relative percentages of fat, muscle, and bone in an individual's body. In relation to health and fitness, the term is not used to refer to the body's nutrient composition or use **(A)**, dimensions of the skeletal system **(B)**, or bone mass or density **(C)**.

75. When encouraging children to integrate healthy eating practices and patterns into their everyday lives, it is best to emphasize that healthy eating habits:
- A. eliminate physical stress by stimulating growth hormone production.
  - B. reduce the need for rest and sleep, leaving more time for play and school activities.
  - C. help prevent both short- and long-term health problems such as colds, dental cavities, and obesity.
  - D. increase cardiorespiratory efficiency without exercise, leading to improved stamina.

**Correct Response: C.** Explaining to children some of the short- and long-term benefits of healthful eating practices, especially by referring to issues they can relate to at even a young age, promotes the likelihood that they will develop lifelong values and positive attitudes related to healthful eating. Choices **A**, **B**, and **D** are not accurate statements about the benefits of healthy eating.

76. To address the developmental levels of middle and high school students, many secondary fitness education programs use a skills-based approach. In this type of approach, the main overall goal is to provide students with:
- A. sufficient practice opportunities in one or two movement forms in order to develop high levels of proficiency in those areas.
  - B. an overview of how external factors (e.g., peers, family, media, environmental conditions) affect personal health and fitness.
  - C. the knowledge and strategies that are essential for improving fitness and maintaining lifelong physical activity.
  - D. information about how to locate, access, and use health-related resources.

**Correct Response: C.** Developing competence in executing fundamental and specific movement skills for a range of physical activities can provide students with abilities and perspectives important for participating in lifelong recreational and fitness activities. The approach introduces students to skills important for many types of sports and fitness activities to encourage their development of general movement proficiency rather than advanced technical skills in one or two activities **(A)**. A skills-based approach focuses on movement activities more than motivational factors **(B)** or skills for researching and using health-related resources **(D)**.

77. The goals of an elementary physical education program include promoting students' sense of self-worth and perception of physical competence, as well as fostering their appreciation and enjoyment of group and team games. These goals are specifically designed to address which area of student development?
- A. social-emotional development
  - B. intellectual development
  - C. motor development
  - D. moral development

**Correct Response: A.** Promoting students' sense of self-worth, positive perceptions of physical competence, and enjoyment and appreciation of group activities is essential for helping students achieve well-being, emotional health, and positive interpersonal and social skills. Intellectual, motor, and moral development, **(B)**, **(C)**, and **(D)**, would most likely be addressed by other types of program goals, such as those related to understanding skills, strategies, movement mechanics, and fair play.

78. Which of the following best describes a significant challenge in secondary physical education programs?
- A. providing genuine field experiences for pre-service teachers seeking certification in physical education
  - B. providing adequate time and activities to encourage students to adopt a lasting ethic of physical activity
  - C. locating contemporary curriculum models designed to promote healthy and active lifestyles
  - D. distinguishing between physical activities for secondary programs and middle school programs

**Correct Response: B.** One of the most important goals of a secondary physical education program is to provide students with the knowledge, skills, and motivation to participate in physical activities throughout their lives. A significant challenge in pursuing that goal is finding adequate time and developing appropriate activities to encourage students' development of an appreciation of and commitment to physical activity. Most teacher education programs offer preservice teachers opportunities for work experience in the field **(A)**. Locating contemporary curriculum models is unlikely to be a significant challenge for secondary physical educators **(C)**, nor is distinguishing between appropriate activities for middle school versus high school physical education programs **(D)**.



79. In a school–community collaboration, a local fitness facility agrees to offer high school students free passes to the facility after they receive related fitness instruction in a physical education class. Which of the following best describes a primary advantage of this type of collaboration?
- A. Previewing the facility improves chances that students will continue to use it, which benefits both the facility and students.
  - B. The arrangement generates goodwill between the facility and local businesses owned by students' families.
  - C. The facility provides a less stressful environment for students who are self-conscious about body composition.
  - D. The collaboration allows physical education teachers to reallocate time usually spent on fitness to other instructional areas.

**Correct Response: A.** Students who become familiar with and competent at using a fitness facility as part of their school activities are more likely to take advantage of this physical activity opportunity than if they had to seek out a facility on their own. This can encourage students' development of lifelong fitness habits as well as provide a financial benefit to the fitness facility. Although this arrangement can promote goodwill within the community **(B)**, that would not be the primary benefit. Students who are self-conscious about body composition are likely to experience similar feelings at school and at a fitness facility **(C)**. Fitness education should remain a part of the school curriculum even when some students are physically active outside of the school environment **(D)** so that all students have opportunity to participate in that learning.

80. While introducing students to an outdoor tag game called "Kick the Can," the physical education teacher says that the game probably originated in Great Britain in the mid-1800s. The teacher tells students that the same game is called "Burkuit" in Holland. The teacher also notes that in India, a similar game is called "Esha Desai," and that in Japan, a variation of the game is called "Kankai." Imparting this type of information to students is important primarily because it:
- A. communicates that games are enjoyed by many cultures and played throughout the world.
  - B. reflects the teacher's awareness that the game might not be familiar to all students.
  - C. illustrates that physical education is an essential part of school curriculums in other countries.
  - D. demonstrates the teacher's facility with other languages, thereby strengthening relationships with students of diverse backgrounds.

**Correct Response: A.** Informing students that games they play are also played by children in other parts of the world can help them recognize and appreciate the similarities and differences among global cultures, which is an important general learning goal. For students who are unfamiliar with a game **(B)**, it would be most effective for the teacher to explain how it is played and what rules it uses. The teacher has not provided enough information for students to conclude that games are part of school curricula globally **(C)**, or that the teacher has significant facility with other languages **(D)**.

81. In a school district, physical education teachers work with central office technical staff to incorporate wellness technology into schools on a district-wide basis. The wellness technology includes the *FITNESSGRAM®*, *ACTIVITYGRAM®*, and MyDietAnalysis programs. This collaboration is likely to maximize the physical education program's effectiveness by:
- A. providing parents/guardians and administrators with immediate access to fitness program accountability data.
  - B. eliminating the need for teachers to use additional forms of physical fitness wellness assessment techniques and tools.
  - C. establishing a networking system by which physical education teachers can easily communicate with students' families, faculty, and service providers.
  - D. providing students and teachers with immediate access to data and allowing students to design, monitor, and progress toward personal wellness goals.

**Correct Response: D.** These wellness technology software programs enable students and teachers to input personal data related to physical activities and diet, obtain personal analyses and other data, create fitness and dietary plans, and assess progress, which can be used to enhance the effectiveness of a physical education program. While these programs provide assessments of individuals' fitness levels they do not reflect program accountability **(A)**, and teachers still need to assess student progress toward learning goals **(B)**. Teachers and parents/guardians may access the information recorded by the programs, but they are not designed as communication tools **(C)**.

82. Which of the following strategies is likely to be most practical and effective in advocating for and promoting the values of physical education programs?
- A. encouraging teachers in other subject areas to integrate motor learning and movement science concepts routinely into instruction
  - B. assisting teachers and administrators in locating and accessing inexpensive fitness and recreational resources and facilities in the community
  - C. devoting equal amounts of physical education time and resources to developing students' cognitive, social, physical, and motor skills
  - D. using a variety of media and opportunities to communicate with students, families, and school community members about fitness and recreational resources and activities and their benefits

**Correct Response: D.** Providing others with information that helps them understand the content, availability, and benefits of fitness activities is most likely to promote their recognition of the value of and support for a physical education program. While integration with academic studies **(A)**, incorporating inexpensive resources **(B)**, and developing a balanced curriculum and lesson plans **(C)** are important components of a physical education program, communication about the goals and benefits of the program will be the most effective advocacy tool.

83. Which of the following practices is likely to be most essential for the smooth functioning of elementary physical education classes?
- A. establishing and announcing to students time goals for each lesson activity
  - B. ensuring that there is a procedure in place for dealing with interruptions during class
  - C. preparing the activity space and having necessary equipment on hand prior to lesson activities
  - D. assigning students into teams or squads that remain intact over the course of a term or semester

**Correct Response: C.** Preparation is an important key to the success of any lesson or activity. Time goals will not be appropriate for every activity **(A)**, and students' development of social skills and sportsmanship will be promoted by opportunities to play, compete, and interact with a variety of teammates during a term **(D)**. A teacher should have a range of strategies for managing interruptions during lessons, but those will not replace the value of effective preparation for the activity, and good preparation may even minimize interruptions **(B)**.

84. Which of the following best describes the core equity issues that are most important for physical education teachers to consider in designing appropriate instruction?
- A. gender, individual differences in experience and skill level, and cultural relevance
  - B. NASPE content standards and definitions of a physically educated individual
  - C. authentic outcomes and alignment between instructional goals and assessment
  - D. prevailing values and economic forces in the sport and leisure industries

**Correct Response: A.** A concern for equity promotes the inclusion of all students in a physical education program regardless of gender, individual experience or skill level, and cultural perspectives. While addressing content standards **(B)**, assessing outcomes and alignment with goals **(C)**, and awareness of prevailing perspectives towards sports and leisure activities **(D)** are important components of a program, they are not related to issues of equity.

85. During an overhand throwing activity, a physical education teacher tells a student, "Great L-shape throwing the ball. Now try to take a longer step toward the target." This is an appropriate cue to help improve performance of a skill, primarily because it:
- A. avoids the use of physical education jargon and motor learning terms.
  - B. defines the motor task in visual terms for the student and provides spatial directions.
  - C. challenges the student to go beyond what the student most likely perceives as his or her potential.
  - D. combines positive specific feedback with encouragement to correct one component of the skill.

**Correct Response: D.** Corrective feedback to students is often necessary. When this is conveyed as constructive encouragement and in a positive context, such as by including acknowledgment of correctly performed elements, it reinforces a student's skill use and belief in his or her ability to accomplish what is needed, and it also motivates further effort. The positive context and constructive feedback are more likely to promote improvement than the specific terminology used **(A)** or the use of visual and spatial information **(B)**, which could also be presented in a negative context. The content of this particular feedback is related to promoting the student's self-confidence and skill improvement, more than to challenging the student to go beyond his or her personal perceptions **(C)**.

86. During a lesson on kicking, the physical education teacher notices that some students fail to step forward with their kicking foot and leap onto their nonkicking foot just before the kick. Which of the following strategies would be most helpful in adapting this activity to address these issues?
- A. Place a plastic cone in front of each student's dominant side and instruct students to step, leap, and kick without a ball, trying to skim the cone.
  - B. Sprinkle powder on the lower half of balls and encourage students to step, leap, and kick and then check the ball to see where their foot made contact.
  - C. Have students concentrate on a design element on the balls (e.g., a seam, a pattern, a label) to improve their focus and technique during the kick.
  - D. Place two poly spots at the desired distances in front of each student and instruct students to step on one and leap onto the other before contacting the ball.

**Correct Response: D.** Using poly spots and specifying the action(s) to perform at each one will help students break down and master individually the discrete actions required for kicking, and will help clarify the linked sequence of actions. Though the cone strategy may encourage development of leaping skills, it does not provide for integrating the skill with actually kicking a ball **(A)**. Offering visual aids for the point of contact with the ball **(B)** and **(C)** can help improve a student's kicking action and accuracy, but does not contribute to kinesthetic understanding of how to execute and connect the step-leap-kick sequence.



87. Which of the following is a primary advantage of using commercially-prepared task cards when teaching physical education skills to students?
- A. Teachers can be assured that students will demonstrate consistency in performing skills.
  - B. The cards can be quickly adapted for use as assessment rubrics in order to evaluate performance.
  - C. Students can refer to the cards as needed for written cues and visual images of proper techniques.
  - D. The information on the cards can be easily revised or rearranged to address specialized skills.

**Correct Response: C.** Task cards provide progressive, individually paced information, allowing students to access and implement skill information and concepts as they need them. Using task cards, students will progress at an individual pace and will demonstrate individual differences in performing skills, as they would with other methods of instruction **(A)**. Task cards guide progress through learning a skill, rather than assessing varied levels of performance **(B)**. Commercial task cards are printed, so information on a card cannot be easily revised **(D)**.

88. The Internet is likely to be most useful to physical education students for which of the following research purposes?
- A. locating appropriate resources for individual physical activities and nutritional needs and guidelines
  - B. finding information on the manufacturers of various fitness products and equipment
  - C. estimating the number of universal games that exist in various countries under different names
  - D. comparing the advantages and disadvantages of various physical fitness regimens

**Correct Response: A.** Many Web sites provide useful information about local physical activity and recreation areas and facilities, such as parks, playing fields, hiking and biking trails, fitness centers, and community sports and recreational clubs. Others provide reliable information on nutrition needs, guidelines, and recommendations for weight management. Using the Internet to locate information on the manufacturers of various fitness products and equipment, while possible, would not be especially useful to students **(B)**. It would be unrealistic and overly challenging to try to determine numbers of universal games through Internet resources **(C)**. Although many types of fitness routines and regimens are described on Web sites, the instructions do not generally include comparison of details with others **(D)**.

89. Which of the following is a significant advantage of using formative assessment strategies?
- A. They provide teachers with feedback about student progress and help identify areas of strength and weakness.
  - B. They provide standardized data that captures the degree to which students have achieved learning outcomes.
  - C. They allow comparisons to be made between individual students and between groups of students.
  - D. They are useful for providing documentation to parents/guardians, administrators, and stakeholders related to program effectiveness.

**Correct Response: A.** Formative assessments are conducted during the learning process to monitor learning so a teacher can provide appropriate feedback and evaluate and adjust instructional goals or establish new goals. Information obtained in formative assessments is particular to the learning situation, it so does not provide standardized data **(B)** and is more important for continuously monitoring progress rather than making comparisons **(C)**. Summative assessments are typically used to provide documentation of program effectiveness **(D)**.

90. Physical education assessment strategies are likely to be most effective when careful planning is done to ensure that assessments:
- A. are presented in written formats that are familiar to students.
  - B. achieve an equal balance between informal and formal instruments.
  - C. utilize consistent directions and testing conditions.
  - D. are aligned with student outcomes and instructional frameworks.

**Correct Response: D.** The most important goal of assessments is to ensure that student learning aligns with standards for and goals of instruction. The format of an assessment can vary depending on the circumstances and purpose **(A, C)**. Assessments can be informal or formal, and the purpose of the assessment and effectively evaluating all learning goals involved is more important in determining which type of assessment to use than is creating a balance between the two approaches **(B)**.

91. Playing a "Simon Says" activity with kindergarten students would be an appropriate strategy for a physical education teacher to use to evaluate students' ability to follow directions and to:
- A. distinguish among locomotor skills.
  - B. demonstrate body awareness concepts.
  - C. use effective balancing skills.
  - D. differentiate personal space from general space.

**Correct Response: B.** As the teacher uses a "Simon Says" activity to ask students to move and touch various body parts, their movement responses will help the teacher assess the students' awareness of what various body parts are, where they are in space, and how to isolate and coordinate the movement of body parts. The use of locomotor and balancing skills in the activity (**A, C**) will be minimal at the kindergarten level and is not the focus of the game. With movements that take place primarily within personal space, the activity would not provide the most effective strategy for helping students learn to distinguish personal from general space (**D**).

92. Which of the following assessment strategies would be most appropriate for assessing student progress in mastering a new motor task?
- A. conducting observations of the student's performance of the task in familiar practice or game situations
  - B. evaluating the student's technique by interviewing the student about how he or she feels while performing the task
  - C. determining whether the student has progressed from the cognitive stage of motor learning to the associative stage
  - D. assigning the student a writing task to check whether he or she can describe how to perform the motor task

**Correct Response: A.** Direct observation of a student's use of a new motor skill in an authentic setting would provide the most accurate assessment of degree of mastery of the physical skill. Interviewing the student or using a writing task for assessment would be more effective for testing conceptual knowledge, such as understanding of rules for games, strategies, and skills important to an activity **(B, D)**. Recognizing the learning stage involved in the student's execution of the skill can help the teacher evaluate the ways in which the student is thinking about performing the physical movements **(C)**.

93. When using standardized, norm-referenced assessment software to assess physical education students, it is most important to ensure that:
- A. test administration procedures are flexible.
  - B. the testing instrument employs a standard multiple-choice format.
  - C. test items correspond to specific levels of the psychomotor taxonomy.
  - D. the demographic characteristics of the norm group are similar to those of the group being tested.

**Correct Response: D.** In norm-referenced tests, students' scores are based on comparison to the performance of a statistically selected group of test takers. Because students from different socioeconomic groups tend to have different educational experiences, students' scores will not be meaningful or equitable if the selected reference group has significantly different demographic characteristics. Test administration procedures should be consistent among students to provide a valid comparison **(A)**. Norm-referenced tests may use multiple-choice or short-answer formats, or a combination of both **(B)**, without influencing the comparison of an individual's performance to the reference group. The psychomotor domain involves physical skills that cannot be tested through a written format but are effectively measured by assessing physical movement **(C)**.

94. Which of the following practices is most important to use in conference discussions with parents/guardians about the performance of physical education students?
- A. assuring parents/guardians that all physical education instruction is developmentally appropriate
  - B. addressing student strengths and achievements in addition to areas needing improvement
  - C. asking parents/guardians whether their child's progress in physical education meets their expectations
  - D. describing in detail the assessment tools and techniques used to evaluate student performance

**Correct Response: B.** Students' achievements and strengths in learning, knowledge, and performance are as important a reflection of their education as areas in which they need improvement, and parents/guardians should be made aware of all dimensions of their children's physical education. Details about appropriate developmental levels used in instruction **(A)** or specific assessment tools and techniques **(D)** may not be meaningful to parents/guardians or as helpful to them in understanding their child's progress. Although it may be helpful to learn about the expectations of parents/guardians, it would be more important to focus the conference on concrete goals for their child's physical education **(C)**.



95. Which of the following is considered an unethical practice according to professional codes of conduct for physical educators?
- A. using classroom observations, checklists, or other types of informal assessment data to inform or revise instruction
  - B. discussing health-related implications of a body mass index or skinfold measurement with a student's parent or guardian
  - C. using a physical education assessment tool or test for a purpose for which it was not designed or validated
  - D. presenting aggregate or group fitness test results rather than individual student data to illustrate the need for fitness resources

**Correct Response: C.** Assessments are designed to gather information for specific purposes, and the validity of an assessment is compromised if it is used in a way that differs from its intended use unless the assessments have been validated for these purposes. For example, student fitness test scores should not be used to determine student grades, evaluate the overall quality of a physical education program or course, or assess teacher effectiveness. Using information obtained in informal formative assessments such as classroom observations and checklists to monitor learning and adjust instruction is a valid use of assessment **(A)**. Because a student's body mass index is related to his or her health and potential health risks, it is appropriate to talk confidentially with students and parents/guardians about such results **(B)**. Aggregate test results are an effective way to summarize one aspect of program effectiveness, and they are a useful and ethical reference tool **(D)**.

96. Which of the following teaching practices is most likely to protect a physical education teacher from potential charges of negligence in the event of a student injury in class?
- A. providing students with developmentally-appropriate instruction based on recommended skills progressions
  - B. limiting feedback related to student performance of skills to positive individualized feedback or generalized group feedback
  - C. allowing students to sit out during any activities in which they feel anxious about participating
  - D. ensuring that instructional demonstrations of skills are perfectly executed and always accompanied by written descriptions

**Correct Response: A.** Physical education teachers have a professional responsibility to provide students with developmentally appropriate instruction based on well-established skill progressions that build from simple to complex. Teachers should ensure that students have the prerequisite skills for physical education activities and tell students about any activity-related and safety precautions for avoiding injury. But because physical activities do include some inherent risks, injuries may occur. A well-documented skills progression matched to students' developmental characteristics helps protect a teacher from charges of negligence in the case of injury. Positive feedback is important, but it would be counterproductive to not offer individual students corrective feedback as well, as that can help them understand what they need to work on improving **(B)**. In physical education, allowing students to sit out during instructional activities **(C)** is considered inappropriate practice; however, best practice may include allowing students to participate in an alternate activity. Skills may be demonstrated visually with or without verbal or written descriptions, and although well-executed skill demonstrations are desirable, less than perfect demonstrations are typically not considered a negligence issue **(D)**.

97. Which of the following procedures is likely to be most important in ensuring that a physical education facility remains free of safety hazards?
- A. documenting general safety concerns noted by students and parents/guardians and sending them to school administrators
  - B. making sure that safety inspections occur regularly and that resulting concerns are quickly addressed
  - C. comparing physical education safety procedures to occupational safety standards and matching procedures to industry standards
  - D. networking with physical education teachers who serve similar school populations and discussing common safety issues

**Correct Response: B.** Facilities and equipment must be checked for safety concerns on a regular basis and any issues immediately addressed. Continued use of known unsafe facilities or equipment presents a risk of injury to users and a situation for liability. Safety concerns voiced by students or parents/guardians should be investigated and remedied if needed; making a record of them does not protect student safety or avoid negligence issues **(A)**. Physical education activities are unique to the field and require their own appropriate standards for safety **(C)**. Discussing safety concerns with other teachers is useful for recognizing issues and developing solutions, but on its own is not enough to ensure student safety unless actions are taken to remedy any problems **(D)**.

98. In a gymnasium, which of the following conditions is most likely to pose the greatest risk of injury during basketball games?
- A. an emergency telephone mounted on the wall just beyond a baseline of the court
  - B. a pile of mats in one corner of the gym outside the end line and base-line of the court
  - C. a nonfunctioning overhead fluorescent light at mid-court
  - D. a narrow safety zone between an end line of the court and a gym wall

**Correct Response: D.** Because students are moving quickly and focused on the ball and other players during a game, a narrow safety zone risks the possibility of students crossing the end line moving at a speed too great to be able to stop before running into the wall. An emergency phone on the wall does not present a significant physical obstruction and would be a valuable safety precaution **(A)**. A pile of mats outside the baseline would cushion any inadvertent contact and present no safety issue unless they are so close to the baseline they present a tripping hazard **(B)**. One nonfunctioning light is not a safety hazard if other lights are working and the court is adequately lit for use **(C)**.

99. In cardiopulmonary resuscitation (CPR), the key objective of rescue breathing and chest compressions is to:
- A. clear a foreign-body obstruction in the airway of an unconscious victim.
  - B. oxygenate and circulate the blood in a victim whose heart has stopped beating.
  - C. shock the heart of a victim of cardiac arrest so that a normal heart rhythm is resumed.
  - D. provide artificial ventilation for a victim who is in severe respiratory distress.

**Correct Response: B.** CPR is used to artificially pump blood in the body of a person whose heart has stopped functioning properly. Rescue breathing pushes air into the lungs, and chest compressions pump oxygenated blood to the brain. The airway should be checked and cleared if necessary before beginning rescue breathing and compressions **(A)**. An electrical shock administered by emergency personnel using a defibrillator would be required to restart a heart that has stopped beating **(C)**. A person who is in respiratory distress is still breathing, hence CPR should not be started but emergency assistance should be activated **(D)**.

100. During an outdoor soccer activity on a hot, humid day, a student becomes dizzy. The physical education teacher moves the student to a shady spot and notes signs of heat exhaustion in the student. Which of the following steps should the teacher take next in treating the condition?
- A. Cover the student with a light blanket and elevate his or feet.
  - B. Cool the student's skin with isopropyl alcohol.
  - C. Give the student sips of water or a sports drink.
  - D. Have the student swallow a few salt tablets with water.

**Correct Response: C.** A student who experiences heat exhaustion needs to have his or her body cooled. After moving the student to a cool location, the student can benefit from sipping a half glass of cool, but not cold, water every 15 minutes or so and having cool, wet towels placed on the skin. Water is important to prevent dehydration, which could lead to heatstroke. It would be inappropriate to cover a student who is showing signs of heat exhaustion with a blanket, as this could exacerbate the condition **(A)**. Isopropyl alcohol can be irritating to the skin and can irritate the lungs, and thus is inappropriate for this condition **(B)**. Salt tablets can be difficult to digest and do not provide the immediate assistance required by someone experiencing heat exhaustion **(D)**.