



National Evaluation Series™

# NES

## PROFILE

**Physical Education (506)**

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# NES Profile: Physical Education (506)

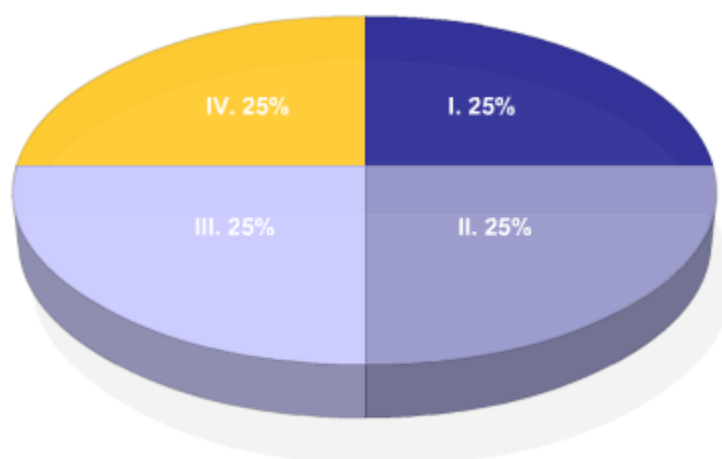
## Overview

This *NES Profile* provides information about the test, including the approximate percentage of the total test score derived from each content domain. The complete set of the content domains, the test framework, is provided here and contains all of the competencies and descriptive statements that define the content of the test.

This *NES Profile* includes the following materials:

- » the test competencies associated with each content domain
- » a set of descriptive statements that further explain each competency
- » sample test questions aligned to the competencies
- » any applicable reference materials, as noted below

<b>Test Field</b>	Physical Education (506)
<b>Test Format</b>	Multiple-choice questions
<b>Number of Questions</b>	Approximately 150
<b>Test Duration</b>	Up to 3 hours
<b>Reference Materials</b>	None required



Key	Approximate Percentage of Test	Content Domain	Range of Competencies
I.	25%	I. Growth and Motor Development	0001–0003
II.	25%	II. Movement Activities	0004–0006
III.	25%	III. Lifelong Physical Fitness	0007–0009
IV.	25%	IV. The Physical Education Program	0010–0012

## Content Domain I: Growth and Motor Development

### Competencies:

**0001** Understand stages and characteristics of human growth and development.

### Descriptive Statements:

- » Demonstrate knowledge of stages and characteristics of physical, cognitive, social, and emotional development during infancy, childhood, adolescence, and adulthood.
- » Recognize factors that influence physical, cognitive, social, and emotional growth and development.
- » Analyze significant developmental and gender-specific issues during childhood and adolescence.
- » Analyze the influence of peers, family, media, society, and culture on personal growth and development and health and fitness practices.
- » Demonstrate knowledge of major physical development milestones and changes and their impact on motor development and a physically active lifestyle.
- » Analyze how physical activity patterns are likely to change throughout the life span, implications of these changes, and strategies to address these changes.
- » Demonstrate knowledge of components of wellness and principles and techniques for maintaining wellness throughout the life span.

### Sample Item:

**Which stage of development is typically characterized by slow and steady physical growth, refinement of fundamental motor skills, and the ability to think in concrete operational terms?**

- A. the early childhood years (ages 2 to 6)
- B. the middle childhood years (ages 6 to 11)
- C. the early adolescent years (ages 11 to 15)
- D. the later adolescent years (ages 15 to 18)

### Correct Response and Explanation

**B.** This question requires the examinee to demonstrate knowledge of stages and characteristics of human growth and development. The middle childhood stage of physical development is characterized by slow, steady growth and improvement and refinement of motor skills. Cognitively, children are said to be in the concrete operational stage, which Piaget defined as the capacity to engage in mental operations or internalized actions that fit into a logical system. Children carry out these mental operations in the presence of the concrete objects and events being thought about.

**0002** Understand concepts and principles of anatomy and physiology as they relate to movement and physical fitness.

#### Descriptive Statements:

- » Demonstrate knowledge of the general organization and components of the skeletal, muscular, circulatory, respiratory, nervous, and digestive systems.
- » Distinguish between functions, actions, and physiological processes of the major body systems.
- » Recognize the interactions between body systems in producing movement and ways in which energy systems are utilized during physical activity.
- » Identify physiological changes and adaptations that result from regular physical activity.
- » Analyze factors that affect physical fitness and performance and strategies for addressing these factors.
- » Recognize potential health risks associated with inactivity and low levels of physical fitness and the relationship between physical activity and the prevention of illness and disease.

#### Sample Item:

**At the onset of puberty, the hypothalamus signals the pituitary gland to release growth hormone and stimulate the production of thyroxine. The increase in these two substances, which causes gains in body size and skeletal growth, results primarily from the interaction of which two body systems?**

- A. the muscular system and the skeletal system
- B. the circulatory system and the integumentary system
- C. the nervous system and the endocrine system
- D. the respiratory system and the reproductive system

#### Correct Response and Explanation

**C.** This question requires the examinee to distinguish between functions, actions, and physiological processes of body systems. The brain, part of the central nervous system, houses the hypothalamus, which regulates the endocrine system, including the thyroid and pituitary glands. When thyroxine levels are low, the hypothalamus secretes a releasing hormone that stimulates the pituitary to secrete thyroid stimulating hormone (TSH), which in turn causes the thyroid to secrete thyroxine. Thyroxine stimulates metabolic rate and influences protein production, which affects the growth rate of children. The anterior lobe of the pituitary secretes somatotropin or growth hormone (GH), which stimulates bone and muscle growth.

**0003** Understand principles, sequences, and characteristics of motor development and motor learning.

#### Descriptive Statements:

- » Recognize typical sequences and characteristics of motor development during infancy, childhood, adolescence, and adulthood.
- » Demonstrate knowledge of components of perceptual-motor development (e.g., visual, auditory, tactile, and kinesthetic discrimination) and how they relate to motor skill acquisition and performance.
- » Apply knowledge of theories, concepts, and typical progressions of motor learning.

- » Analyze factors that influence motor development, motor learning, and motor control.
- » Recognize motor learning principles related to readiness, practice, retention, observational learning, feedback, transfer, and motor-task analysis as they relate to skill acquisition and performance.
- » Recognize principles and techniques for modifying activities, sports, and games to promote motor learning and control and the use and integration of particular motor behaviors, patterns, and skills.

**Sample Item:**

**In the context of motor learning, the concept of *readiness* refers to the:**

- A. combination of maturation and experience that allows an individual to learn and acquire a new motor skill.
- B. ability of an individual to alter motor behaviors in order to adjust to changing demands in a learning environment.
- C. capacity of human biology, as in neural and bone development, to reorganize and respond to a motor challenge or injury.
- D. interplay of environmental factors that results in favorable or ideal conditions in which to learn a new motor skill.

**Correct Response and Explanation**

**A.** This question requires the examinee to recognize concepts and principles of motor learning. The concept of readiness relates to factors that affect an individual's ability to acquire a motor skill. Readiness is primarily determined by the biological maturity of the learner (the learner's level of physical growth and motor development) and the learner's experience (the way in which practice conditions and the motor learning environment affect how the skill is learned). According to motor learning principles, when a motor learning activity is appropriate for the physical, cognitive, and emotional development of students and environmental conditions are favorable, learners will gain proficiency in new motor skills.

## Content Domain II: Movement Activities

### Competencies:

**0004** Understand fundamental movement concepts and skills and principles of biomechanics.

### Descriptive Statements:

- » Demonstrate knowledge of how to promote understanding of fundamental movement concepts related to body awareness, spatial awareness, force, direction, time, level, pathway, energy, and speed.
- » Recognize biomechanical principles related to motion, stability and balance, center of gravity, force production and absorption, buoyancy, rotation, torque, speed, accuracy, acceleration, equilibrium, and velocity.
- » Apply knowledge of biomechanical principles in the context of various movement activities and individual body mechanics for safe and efficient movement.
- » Identify characteristics and critical elements of locomotor skills.
- » Identify characteristics and critical elements of nonlocomotor skills.
- » Identify characteristics and critical elements of object control/manipulative skills.
- » Demonstrate knowledge of principles and activities for developing locomotor, nonlocomotor, and object control/manipulative skills and for using these skills in combination.

### Sample Item:

**During a soccer unit, a physical education teacher provides cues to promote students' efficiency in skill execution. For example, for passes, the teacher reminds students to place their nonkicking foot alongside the ball with toes pointed at the target to help create velocity in the kicking foot and improve accuracy. To increase the distance of throw-ins, the teacher tells students to bring the ball back behind their heads with elbows bent, and then flex their trunk and extend their arms forcefully and directly overhead on the release. This approach is most closely aligned with which of the following national standards for physical education?**

- A. Achieves and maintains a health-enhancing level of physical fitness.
- B. Demonstrates competency in motor skills and movement patterns needed to perform a variety of physical activities.
- C. Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities.
- D. Exhibits responsible personal and social behavior that respects self and others in physical activity settings.

### Correct Response and Explanation

**C.** This question requires the examinee to apply knowledge of movement concepts and biomechanical principles in the context of movement activities. In this scenario, the physical education teacher demonstrates how to integrate Standard 2 of the National Standards for Physical Education, "Demonstrates understanding of movement concepts, principles, strategies, and tactics as they apply to the learning and performance of physical activities," into an instructional activity. By pointing out how to use body mechanics to improve velocity and accuracy in passing and distance in throw-ins in soccer, the teacher illustrates for students how knowledge of biomechanical concepts and movement principles can be used to develop efficiency in skill execution.

**0005** Understand principles, techniques, skills, activities, organizational strategies, and safety practices for sports and recreational activities.

### Descriptive Statements:

- » Demonstrate knowledge of rules, activities, skills, strategies, etiquette, types and uses of equipment, organizational strategies, and safety practices for sports and recreational activities.
- » Identify critical elements, techniques, and proper form for executing a variety of movements in fundamental and complex sports skills.
- » Distinguish between sports and recreational activities appropriate for various purposes and developmental levels.
- » Identify strategies for helping individuals overcome barriers to participation in sports and recreational activities and for modifying activities to promote maximum participation and inclusion.
- » Recognize the benefits of lifelong participation in sports and recreational activities.

### Sample Item:

**In a game of volleyball, a "bump" or forearm pass is the most appropriate technique to use to:**

- A. spike the ball over the net.
- B. play a ball that arrives low and with force.
- C. receive a ball off of the net.
- D. return a ball that arrives at chest height or higher.

### Correct Response and Explanation

**B.** This question requires the examinee to identify techniques for executing complex sport skills. In volleyball, a forearm pass, or "bump," is recommended for playing a ball that arrives with force below chest level and is often used to receive serves and spikes. In the forearm pass, a player extends the arms in front of the body and joins hands, keeping hands and wrists together. The elbows rotate in so that the widest portion of each forearm faces upward. The elbows are locked on contact and the ball is contacted between the wrists and elbows.



**0006** Understand principles, techniques, skills, activities, organizational strategies, and safety practices for rhythmic movement and dance; stunts, tumbling, and educational gymnastics; and cooperative, group, and adventure activities.

#### Descriptive Statements:

- » Recognize elements of rhythm; types of rhythmic movement activities; and skills and strategies for integrating locomotor patterns, nonlocomotor skills, and transitions into rhythmic movement.
- » Recognize principles, techniques, elements, sequences, activities, organizational strategies, safety practices, and types of music for promoting development of creative movement and dance skills.
- » Demonstrate knowledge of principles, techniques, skills, activities, organizational strategies, safety practices, and equipment for promoting development of stunts, tumbling, and educational gymnastics skills.
- » Apply knowledge of rules, techniques, skills, activities, types and uses of equipment, safety practices, and organizational strategies for cooperative games and group challenges.
- » Demonstrate knowledge of principles, techniques, skills, activities, organizational strategies, safety practices, and equipment for adventure activities.
- » Recognize the benefits of participation in rhythmic and dance activities; stunts, tumbling, and educational gymnastics; and cooperative, group, and adventure activities.
- » Identify strategies for helping individuals overcome barriers to participation in dance; educational gymnastics; and cooperative, group, and adventure activities and for modifying activities to promote maximum participation and inclusion.

#### Sample Item:

**Parachute play contributes to the development of skills important for dance by encouraging students to focus on:**

- A. visual clues for recognizing a rhythm.
- B. shaping movement to mirror shapes created by others.
- C. the ways in which movement can express an idea.
- D. coordinating movement timing with the movement of others.

#### Correct Response and Explanation

**D.** This question requires the examinee to recognize activities that promote development of rhythmic movement and dance skills. In parachute play, students manipulate a nylon parachute as a group, lifting and lowering it to make ripples and domes, and moving clockwise and counterclockwise in a circle while keeping it inflated. These activities, especially when accompanied by counting or a musical cadence, promote students' ability to move in unison and to coordinate the timing and flow of their movements with the movements of others. These skills are transferable to many forms of dance, including line and social dance, which require participants to move to a rhythm in a synchronized way with others.

## Content Domain III: Lifelong Physical Fitness

### Competencies:

**0007** Understand principles and components of health-related physical fitness, including activities for promoting cardiorespiratory endurance, flexibility, muscular strength and endurance, and body composition.

### Descriptive Statements:

- » Demonstrate knowledge of the major health-related components of physical fitness and types of physical fitness training used to address each component.
- » Apply developmentally appropriate knowledge of conditioning and training principles and ways in which they are used and adjusted to improve physical fitness.
- » Recognize principles, skills, techniques, activities, safety practices, and resources for developing, monitoring, and assessing cardiorespiratory endurance.
- » Recognize principles, skills, techniques, activities, and safety practices for developing and improving flexibility of the major joints and areas of the body.
- » Recognize principles, skills, techniques, activities, and safety practices for developing and improving strength and endurance of the major muscle groups of the body.
- » Recognize principles, skills, techniques, activities, and safety practices for developing and improving body composition.
- » Distinguish between types of endurance, flexibility, and strengthening activities and developmentally appropriate equipment, practices, and considerations for these activities.
- » Analyze the safety and effectiveness of various types of fitness exercises.

### Sample Item:



**In the exercise shown above, the student's arm is down to the side with the hand slightly behind the body for support. The other arm extends overhead and reaches to the opposite side. The stretch is held briefly. The student repeats the movement with the other arm. This stretch targets which of the following muscles?**

- A. biceps
- B. erector spinae
- C. gluteus maximus
- D. latissimus dorsi

### Correct Response and Explanation

**D.** This question requires the examinee to recognize techniques and activities for developing and improving flexibility of the joints and muscles. The latissimus dorsi, a wide powerful muscle, arises from the lower vertebral column, covers the lower back, and runs from the side of the trunk to the humerus. The action of the latissimus dorsi draws the upper arm downward and backward and rotates it inward. In the flexibility exercise illustrated, the participant stretches one arm overhead while bending at the waist in the same direction, thereby stretching the side of the trunk where the latissimus dorsi is located. To stretch the other latissimus dorsi, the participant switches arms to stretch the other side of the trunk.

**0008** Understand principles, procedures, and resources for developing and maintaining physical activity/fitness and weight management plans.

### Descriptive Statements:

- » Identify principles, criteria, and methods for designing and implementing individualized fitness plans (e.g., evaluating the need for lifestyle changes, including activities to address major fitness components).
- » Apply knowledge of physical fitness tests and techniques for using fitness assessment results to determine health-related needs and goals.
- » Demonstrate knowledge of techniques for establishing personal fitness, physical activity, and nutritional goals and monitoring progress toward these goals.
- » Analyze the relationships between diet, physical activity, health, and body composition.
- » Recognize sound weight management principles and practices and strategies for integrating them into daily life.
- » Apply knowledge of principles and procedures for analyzing time, cost, accessibility, and resources in relation to participation in physical fitness activities and personal fitness or weight management plans.
- » Recognize strategies for integrating fitness activities into daily life and the benefits of a physically active lifestyle (e.g., reduced stress, enjoyment, challenge, social interaction, reduced health care costs).

### Sample Item:

**Which of the following strategies is likely to be most effective for supporting an adolescent's efforts to lose weight?**

- A. having regular family meal and snack times
- B. sending the adolescent to school with homemade lunches instead of lunch money
- C. involving the entire family in a healthy eating plan
- D. reminding the adolescent frequently of the health risks prevented by losing weight

### Correct Response and Explanation

**C.** This question requires the examinee to recognize sound weight management principles and practices and strategies for integrating them into daily life. Family involvement and encouragement are key to supporting an adolescent's efforts to achieve and maintain a healthy body weight. An adolescent is much more likely to be motivated and committed to healthful eating if his or her family participates in and reinforces the behavior. Strategies such as modeling healthy eating habits and preparing meals that provide the proper balance of nutrients from a variety of foods are essential for establishing sound family nutritional practices.

**0009** Understand the relationship between physical activity and the development of responsible personal and social behaviors and traits.

#### Descriptive Statements:

- » Analyze the relationship between physical activity and the development of positive self-concept, mental and emotional well-being, and enhanced self-management skills.
- » Recognize how sports, games, and fitness activities should promote positive personal behaviors and traits (e.g., civility, self-control, responsibility, confidence, honesty, appropriate attitudes about winning and losing).
- » Analyze ways in which sports, games, and fitness activities should promote positive social behaviors and traits (e.g., leadership, teamwork, cooperation, fairness, support and consideration of others).
- » Recognize the roles of sports, games, and fitness activities in promoting respect, acceptance, and inclusion of peers and in developing understanding and appreciation of diversity.
- » Demonstrate knowledge of the sociocultural benefits of participation in physical activities (e.g., advantages of diverse talent to team membership, awareness of how various cultures view and value physical activity).
- » Identify ways in which physical activities offer opportunities for personal challenge, satisfaction, competition, achievement, positive social interactions, and healthy alternatives to risky behaviors.

#### Sample Item:

**Use the activity description below to answer the question that follows.**

A group of six- and seven-year-old children are playing "amoeba tag." Two children join hands and run around together, chasing and trying to tag others. The first two children tagged join hands with the two "amoebas" and form a chain. At this point, the four children split into two groups. Play continues as each group tries to tag children and add them to its chain. Groups may remain as one chain or divide into even-numbered groups. Chains may link together at will. The game continues until all are tagged.

**Which of the following is a primary advantage of engaging children in this activity?**

- A. It promotes the development of problem-solving skills and consensus-building techniques.
- B. It eliminates risks to children involving accidental collisions or falls.
- C. It encourages children to communicate, cooperate, and use reasoning skills.
- D. It evens out disparities among children related to individual fitness attributes such as speed and stamina.

**Correct Response and Explanation**

**C.** This question requires the examinee to analyze ways in which games promote positive social behaviors and traits. Amoeba tag encourages students to work together in a safe and positive manner. Children in the amoeba chains must communicate with group members and cooperate with group efforts in order to travel together and tag other children. The game prompts children to think about all members of their group, not just themselves, as they move as a group through space and communicate about direction and tactics. The game also encourages children to use reasoning skills in determining when and how to split into smaller even-numbered groups and in developing group strategies for tagging remaining players.

## Content Domain IV: The Physical Education Program

### Competencies:

**0010** Understand how children and adolescents learn and how to provide them with physical education opportunities that support their physical, cognitive, social, and emotional development.

### Descriptive Statements:

- » Recognize key concepts, issues, trends, goals, and purposes associated with student-centered physical education programs.
- » Demonstrate knowledge of age-appropriate and developmentally appropriate activities and instructional strategies that support students' physical, cognitive, social, and emotional development.
- » Demonstrate knowledge of the cognitive dimensions of physical activity and ways to foster critical-thinking, decision-making, problem-solving, and analytical skills in the context of physical activities.
- » Demonstrate knowledge of social and emotional influences on student learning in the physical education setting.
- » Apply knowledge of effective communication techniques that demonstrate sensitivity to student differences, encourage student communication, and foster engagement in the physical education environment.
- » Recognize ways in which students differ in their approaches to learning and appropriate physical education strategies and resources that address diverse learning styles.
- » Identify general principles and teaching strategies for managing and motivating students in physical education settings (e.g., supervision, active learning, discipline practices, effective transitions, feedback).

### Sample Item:

**Students prepare to play team handball on an indoor court. The teacher reminds students that the game resembles soccer played with the hands, incorporates strategies from basketball, and prohibits physical contact. Objectives include eluding defenders and throwing a ball into the opponent's goal, as well as defending one's goal. Only the goalies may occupy a designated area in front of their goal nets. Which of the following additional rules would best maximize participation and promote strategic skills?**

- A. switching from zone defense to player-to-player defense on the teacher's signal as required by the situation
- B. requiring that each offensive play include three completed passes before a shot on goal
- C. specifying that offensive players use bounce shots rather than set or jump shots on attempts to score
- D. having goalies put the ball into play from center court following goals or defensive blocks

### Correct Response and Explanation

**B.** This question requires the examinee to demonstrate knowledge of appropriate activities for supporting students' physical, cognitive, social, and emotional development. In a game of team handball, requiring offensive players to complete three passes before shooting on goal necessitates the involvement of more students and increases the complexity of game play, thereby increasing participation and students' use of tactical skills. This type of rule modification supports students' social and emotional development by promoting fairness, teamwork, and equitable participation by students, while minimizing the ability of highly skilled or aggressive students to monopolize the game. It also supports students' cognitive development by prompting students to make strategic decisions that contribute to accomplishing team goals.

**0011** Understand how to plan, implement, and evaluate physical education instructional activities, including how to adapt activities for diverse learning needs.

### Descriptive Statements:

- » Demonstrate knowledge of how to design and implement physical education activities that are based on principles of effective instruction and governing standards.
- » Analyze activities, lesson plans, instructional resources, and curriculum materials in terms of developmental appropriateness, comprehensiveness, usefulness, and safety.
- » Recognize appropriate activities for students with special needs and for students from diverse cultural or linguistic backgrounds; and techniques for modifying rules, equipment, and settings to accommodate all students.
- » Apply knowledge of strategies and techniques for adapting and modifying physical education approaches, activities, and organizational strategies to ensure individual student progress, motivation, and safety.
- » Demonstrate knowledge of types and characteristics of physical education assessment methods and how to interpret, use, and communicate assessment information to foster students' development and learning.

### Sample Item:

**In an elementary physical education class, students practice racket skills. They use junior rackets to practice drop serves and forehand strokes against a wall and then with partners. One child who has muscular dystrophy is willing and physically able to participate. In which of the following ways could the teacher best address this child's needs in the context of this activity?**

- A. Build in opportunities for rest breaks during class and allow the child to practice the skills at his or her own pace.
- B. Simplify directions used to introduce the activity to the class and refrain from providing verbal cues to the child.
- C. Provide the child with extra practice time before the main activity and try to eliminate distractions during the activity.
- D. Define an individual practice space for the child and his or her partner by using colored tape or cones for boundaries.

### Correct Response and Explanation

**A.** This question requires the examinee to apply knowledge of strategies and techniques for adapting and modifying physical education approaches and activities to ensure individual student progress, motivation, and safety. In this situation, adding opportunities for rest breaks during the racket skill activities and allowing the student with muscular dystrophy to practice at his or her own pace permit the student to participate with other students to the maximum extent possible. By adapting the activity in this way, the teacher addresses the student's individual physical needs and demonstrates sensitivity to the student without singling out or separating the student from the rest of the class.

**0012** Understand ethical, legal, professional, and safety guidelines and practices related to physical education.

#### Descriptive Statements:

- » Demonstrate familiarity with professional codes of conduct, ethical standards, and legal requirements and responsibilities associated with physical education.
- » Demonstrate knowledge of state and federal laws and guidelines related to special education, equity, inclusion, privacy, and other aspects of students' rights in relation to physical activity.
- » Apply knowledge of strategies and resources for communicating and collaborating with parents/guardians, community members, school personnel, and organizations to promote, enhance, and advocate for physical education opportunities for students and self.
- » Recognize appropriate principles and practices related to the selection, care, maintenance, and use of physical education equipment, facilities, materials, media, staff, and technological resources.
- » Analyze principles, techniques, issues, and considerations related to establishing and maintaining a safe physical education environment.
- » Recognize types and characteristics of injuries common to physical activities and principles of injury management and emergency first aid.

#### Sample Item:

**The formal process of assessing possible exposure to injury in a physical education environment and taking action to minimize its likelihood is known as:**

- A. risk management.
- B. negligence per se.
- C. facilities management.
- D. duty of care.



### **Correct Response and Explanation**

**A.** This question requires the examinee to demonstrate familiarity with legal and professional practices related to physical education. The goal of risk management is to reduce foreseeable injuries through preventive practices such as supervising students closely, using skill progressions and age-appropriate equipment, and inspecting facilities and playing areas. A typical risk management planning process involves systematically identifying risks related to a particular physical activity or sport, evaluating risks in terms of likelihood and severity, selecting appropriate means of dealing with risks (e.g., eliminating the riskiest components, devising safety strategies), and implementing procedures to put the risk management plan into action.

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