
Physical Education Standards of Learning

for
Virginia
Public Schools



Board of Education
Commonwealth of Virginia

January 2015

Preface

The 2015 Physical Education Standards of Learning represent the Virginia Board of Education’s ongoing commitment to ensure rigorous, relevant physical education standards that reflect current disciplinary knowledge and research to prepare all students to be capable, responsible, and self-reliant citizens in a global society. Knowledge about human movement is fundamental to optimizing health and performance and preventing injury and illness. As the United States struggles to rein in its growing \$2.7 trillion healthcare bill, leading national public health, medical, and government organizations and agencies have called on schools to adopt more strategies to help children participate in high-quality physical education and physical activity to improve the public’s health and to prevent and control chronic diseases.

In an increasingly sedentary world, schools provide the best opportunity for a population-based approach to enhance the physical, mental, and social development of every child through learning and engaging in a variety of motor skills. In “Make a Difference at Your School,” Centers for Disease Control and Prevention (CDC) reviewed scientific evidence and included 10 school-based strategies to prevent obesity. One of the recommended strategies is implementation of a high-quality course of study in physical education as the cornerstone of a comprehensive approach to promoting physical activity through schools. This not only provides opportunities for students to be active during the school day, but also helps them develop the knowledge, attitudes, skills, behaviors, and confidence needed to be physically active for life.

The 2015 standards reflect a comprehensive approach to learning and more accurately describe the developmental nature of understanding human movement concepts and attainment of skills (Motor Skill Development). Student knowledge of anatomical structures and functions has been scaffolded to provide context for improving skills (Anatomical Basis of Movement). The inclusion of anatomy and physiology concepts extends health-education knowledge, helps students understand movement, and prepares students for biology and other courses related to health sciences. The topics of personal fitness planning and physically active lifestyles have been combined to reinforce and emphasize that a person cannot have personal fitness without a physically active lifestyle. The addition of the concept of energy balance is essential for understanding the need for caloric intake to support body functioning and caloric expenditure for optimal cognitive and physical performance and healthy weight. Understanding energy balance provides the foundational knowledge necessary to empower students to think critically about their nutrition and activity choices and changing needs throughout life. The CDC document lists “knowledge, attitudes, skills, behaviors, and confidence” as important for high-quality physical education programs, and these skills are reflected in the Social Development strand. The 2015 standards change the fourth strand from Responsible Behaviors to Social Development to shift the emphasis on compliant behaviors to a focus on the knowledge and skill sets that students need to communicate, collaborate with others, and to be contributing participants in the larger community.

INTRODUCTION

Physical education is an academic discipline that involves the study of human movement and its impact on health and quality of life. Physical education and physical activity have short- and long-term influences on the physical, cognitive, and psychosocial health and development of children and adolescents. Physical education in schools provides all students access to standards-based instruction that promotes health literacy, and the motivation to engage in the health-enhancing physical activity needed to achieve and maintain a balanced, healthy life. Physical education areas of study include human anatomy, physiology, exercise science, and kinesiology needed to apply discipline-specific biomechanical concepts critical to the development of physically literate individuals; psychology and socio-cultural analysis of functional fitness and sport; and other health-related fields in kinesiology.

The *Physical Education Standards of Learning for Virginia Public Schools* identify the academic content for the essential concepts, processes, and skills for physical education in kindergarten through grade twelve. These standards provide school divisions and teachers with a guide for creating aligned curricula and learning experiences in physical education to help students understand the benefits of achieving and maintaining a physically active lifestyle and learn the skills necessary for performing a variety of physical activities.

Physical education is unique in that it focuses on learning about and learning through physical activity. It offers many opportunities for students to build positive interpersonal relationships, improve self-esteem, communicate effectively, set goals, apply strategies to enhance performance, exercise self-management skills, collaborate, and develop a sense of social responsibility. It also provides a meaningful foundation for further study in preparation for careers related to the health sciences, sport and exercise science, education, recreation and leisure industries, physical performance, coaching, and fitness and community health management.

The physical education standards are grouped into five overarching content strands: Motor Skill Development, Anatomical Basis of Movement, Fitness Planning, Social Development, and Energy Balance. The standards in each strand are sequenced to progress in complexity from grade level to grade level. Achieving the performance expectations from the previous grade level serves as the foundation for attaining the benchmarks at the next level. The standards are intended to provide students with the necessary knowledge, processes, and skills to become physically educated, physically fit, socially competent, and able to make healthy choices for a lifetime.

Goals and Strands

The purpose of physical education is to develop physically-literate students – students who acquire the knowledge, processes, skills, and confidence needed to make healthy decisions and engage in meaningful physical activity both in the present and for a lifetime. As a result of physical education instruction, the student will be able to:

- Acquire, apply, and evaluate movement concepts and strategies to respond confidently, competently, and creatively in a variety of physical activity settings.
- Access, evaluate, and synthesize health-related information to protect, enhance, and advocate for health, well-being, safety, and participation in physical activity across a lifespan.
- Enjoy and engage in regular movement-based learning experiences and understand and appreciate their significance to personal, social, cultural, and environmental health practices and outcomes.

The content of the Standards of Learning for physical education is organized around the following five essential strands of health and physical development and application:

1. *Demonstrate competence in motor skills and movement patterns needed to perform a variety of physical activities. (Motor Skill Development)*

This strand focuses student learning on the development and demonstration of competence in motor skills and a variety of movement forms, increasing the likelihood of participation in physical activities. Students will have movement experiences that build competent and confident movers through acquisition, performance, and refinement of movement skills in a variety of developmental, tactical, and cooperative activities. Movement competence is defined as the development of sufficient skill and ability to ensure successful performance in a variety of physical activities. In the elementary years, students develop maturity and adaptability in the use of fundamental motor skills and patterns that are then further refined and combined during the middle school years. As motor patterns become more refined and proficient throughout the middle years, they can be transitioned into specialized skills and patterns and used in more complex learning settings. High school students will demonstrate a level of competence in several physical activities that they are likely to continue beyond graduation.

2. *Apply knowledge of the structures and functions of the body and how they relate to and are affected by human movement to learning and developing motor skills and specialized movement forms.*
(Anatomical Basis of Movement)

This strand focuses student learning on understanding basic anatomy and physiology along with movement concepts and principles, to improve motor skills. While the skilled-movement goal involves learning how to perform physical activities skillfully, this goal directs students toward learning about movement. Concepts and principles from various fields of study support skillful movement performance. These fields of study include motor control, exercise physiology, and biomechanics/kinesiology. Active learning experiences will connect the anatomical content with activities being performed. Elementary students establish basic musculoskeletal vocabulary and use simple concepts as they develop their movements. Middle school students learn and apply more complex concepts of human movement. High school students develop a working knowledge of human anatomy and physiology concepts and principles, enabling them to independently apply concepts in order to acquire new skills or enhance existing skills.

3. *Achieve and maintain a health-enhancing level of personal fitness.* **(Fitness Planning)**

This strand focuses student learning on understanding the relationship between a health-enhancing level of physical fitness and the prevention of chronic disease. The intent is for students to explain the importance of fitness and active lifestyles, to be able to evaluate personal fitness levels, and to create an appropriate fitness plan with goals, activities, and timelines that will maintain and improve their levels of physical fitness. Recommended criterion-referenced wellness testing includes Progressive Aerobic Cardiovascular Endurance Run (PACER), cadence push-ups, cadence curl-ups, back-saver sit and reach, and trunk lift. Elementary students become aware of health-related fitness components (aerobic capacity, muscular strength and endurance, flexibility, and body composition), and engage in a variety of physical activities, and develop a basic fitness plan. Middle school students continue to learn about the components of fitness: how they are developed and improved, how they interrelate, and how they contribute to overall fitness to develop and implement a personal fitness plan. High school students plan, implement, evaluate, and modify a personal, goal-driven fitness plan that enables them to achieve and maintain the level of fitness needed to meet their personal goals for various work-related, sport, and leisure activities.

4. *Demonstrate the aptitude, attitude, and skills to lead responsible, fulfilling, and respectful lives.*
(Social Development)

This strand focuses student learning on the skills and behaviors that lead to personal and group success in physical activity, both in school and settings outside of school. Students will explain and apply skills for communication, cooperation, conflict resolution, goal setting and attainment, critical and creative thinking, resilience, and self-directed learning. Students will explain and demonstrate the

importance of and ability to be safe in a variety of activities. Elementary students recognize and use rules and procedures, focus on safety, respect similarities and dissimilarities, and cooperate with others. Middle school students participate cooperatively with others and understand reasons for rules and procedures. High school students initiate and exhibit responsible behaviors and positively impact the behaviors of others in physical activity settings inside and outside of school.

5. *Explain the importance of energy balance and nutritional needs of the body to maintain optimal health and prevent chronic disease. (Energy Balance)*

This strand focuses student learning on energy balance (nutrition and fitness concepts – functional fitness) and explains the importance of energy balance for physical health and chronic disease prevention. This includes physical activity guidelines, types of physical activity needed for energy balance, importance of physical activity, health-related components of fitness, nutrition guidelines, meal planning, screen time, and sleep. Elementary students understand the basic nutrition and fitness concepts of energy balance. The middle school student will extend learning of energy balance, to include nutrition, fitness concepts, physical activity, health-related components of fitness, nutrition guidelines, meal planning, screen time, and sleep and will explain the connection to personal health and fitness. The high school student will explain the importance of energy balance and nutritional needs of the body to maintain optimal health and prevent chronic disease for the present and into the adult years.

The combination of these five strands leads students toward being able to lead an active, healthy lifestyle skillfully, knowledgeably, responsibly, and vigorously.

Safety

Safety must be given the highest priority in implementing the K-12 instructional program for physical education. A safe learning environment is essential to a successful program. Indoor and outdoor equipment and facilities should be inspected on a regular basis, and teachers should be prepared for any potential emergency. Correct and safe techniques, as well as wise selection of activities, resources, materials, and learning experiences appropriate to age levels, must be carefully considered for every instructional activity. Safe physical education learning environments require thorough planning, careful management, and constant monitoring of student behaviors and activities. Class enrollment should not exceed the designated capacity for the activity or classroom space.

While no comprehensive list exists to cover all situations, the following should be considered to minimize potential safety problems.

- Appropriate supervision should be provided at all times.
- Rules and routines should be established to ensure the safety of each student.
- All students should wear footwear that is supportive, secured to the foot, and that provides good traction.
- There should be obstacle-free space and buffer zones between courts/playing areas and/or teaching stations.
- Walls behind all baskets in a gymnasium should have matting affixed to them.
- Field space should be routinely inspected for obstacles and safety hazards. Any found should be reported immediately for repair or removal.
- Courts should be swept regularly and kept free of dirt and dust.
- Appropriate safety equipment should be worn during instruction, practice, and activity (e.g., shin guards, goggles).
- Adequate space should be provided for activity and number of participants.
- Equipment should be age-appropriate and modified equipment should be used when appropriate.
- Equipment should be inspected prior to each class session, or at least daily, depending on use.

- Unused equipment should be removed from playing areas.
- Students should engage in proper warm-ups and cool-downs.
- First-aid supplies, emergency contact information, and injury control protocols should be readily accessible.

Kindergarten

Participating in a variety of movement experiences to develop fundamental movement patterns is the primary focus of the kindergarten physical education curriculum. While children at this level vary in maturity across all movement skills, they should demonstrate continuous improvement in movement under very simple conditions. While developing fundamental skill patterns, students begin to learn key movement concepts that help them perform in a variety of educational games, dances, and gymnastics. They learn how their bodies react to vigorous physical activity. Students learn to use safe practices, cooperate with and respect others, and follow classroom rules. Experiences in physical education help them develop a positive attitude for leading a healthy, active lifestyle.

Motor Skill Development

- K.1 The student will demonstrate progress toward the mature form of selected locomotor, non-locomotor, and manipulative skills to understand the various ways the body can move.
- Demonstrate and differentiate between walking, running, hopping, galloping, and jumping.
 - Demonstrate bending, pushing, pulling, turning, and balancing on one foot.
 - Demonstrate approaching-mature form (at least two critical elements: which are small, isolated parts of the whole skill or movement) used in stationary manipulative skills for tossing and throwing underhand to targets, bounce and catch, toss and catch, kicking stationary ball to target, striking stationary object with paddle, dribbling, rolling ball underhand to target, trapping and volleying with hand.
 - Demonstrate a minimum of two critical elements used in manipulative skills while moving, to include dribbling with continuous kick (taps) of ball while walking.
 - Demonstrate moving to a beat and to rhythmic patterns using basic locomotor and non-locomotor rhythmic patterns.
 - Demonstrate moving forward, sideways, and in side-to-side directions.
 - Demonstrate moving at low, medium, and high levels.
 - Demonstrate traveling in straight, curving, and zigzagging pathways.
 - Demonstrate fast, slow, and moderate speeds.
 - Demonstrate jumping over a stationary rope and a self-turn single jump.
 - Demonstrate one roll (narrow or curled).

Anatomical Basis of Movement

- K.2 The student will identify basic structures of the body and basic spatial awareness concepts.
- Explain that the body has muscles and bones that help the body move.
 - Identify that the heart as a special muscle that helps the body move.
 - Explain that moving faster makes the heart beat faster.
 - Demonstrate the concept of personal space.

Fitness Planning

- K.3 The student will identify basic fitness concepts.
- Explain that physical activity helps the body grow.
 - Identify activities that can be done at home to keep the body healthy.
 - Identify physical activities that are done with family and with friends for fun.

Social Development

- K.4 The student will use appropriate behaviors and safe practices in physical activity settings.

- a) Demonstrate cooperative and safe play.
- b) Demonstrate general and personal space.
- c) Identify three classroom (procedural) rules.

Energy Balance

- K.5 The student will identify basic concepts of energy balance.
- a) Explain that food provides energy for movement.
 - b) Identify one fruit and one vegetable.
 - c) Explain that fruits and vegetables help the body keep moving.

Grade One

Students in grade one refine locomotor skills and further develop fundamental non-locomotor and manipulative skills in educational games, dance, and gymnastics. They continue to develop an understanding of key concepts and anatomical basis of movement principles and link these concepts and principles to their movement. Students explore and experiment with a range of movement experiences in a variety of environmental contexts, with the goal of becoming confident and competent movers. Students relate participation in vigorous physical activity to changes in the body, to enjoyment, and to improving their health and wellness. They further their understanding of the importance of physical activity and energy balance (nutrition) in their lives. As students increase their understanding of movement, they gain a deeper understanding of how the body moves. Students continue to develop socially as they work safely alone and in groups. The natural enjoyment of physical activity should be reinforced and complemented by a variety of educational game, dance, and gymnastic activities in which students learn and are successful.

Motor Skill Development

- 1.1 The student will demonstrate approaching mature form and the correct critical elements (small, isolated parts of the whole skill or movement) of locomotor, non-locomotor, and manipulative skills.
 - a) Demonstrate critical elements used and distinguish between galloping, leaping, skipping, and sliding.
 - b) Demonstrate non locomotor skills of twisting, curling, bending, stretching, and balancing on different body parts.
 - c) Demonstrate approaching mature forms (at least two critical elements) for use in manipulative skills (e.g., rolling ball underhand to target, underhand throw to targets, underhand toss and catch to self and with a partner, dribbling with hand in general space, dribbling with foot, kicking stationary ball to target, striking stationary object with hand or with short-handled implement, throwing underhand, volleying object upward with various body parts).
 - d) Demonstrate at least two critical elements for the manipulative skills of catching, throwing underhand, striking, dribbling, and kicking, while moving.
 - e) Demonstrate simple educational gymnastic skills, to include balancing at different levels, two different rolls (narrow or curled), moving in two different directions, and transfer of weight.
 - f) Demonstrate moving to a beat or rhythmic pattern in personal (self-space) and general space.
 - g) Perform a teacher-led dance.
 - h) Demonstrate forward, sideways, backwards (slow), and side-to-side directions.
 - i) Demonstrate low, medium, and high levels.
 - j) Demonstrate straight, curving, and zigzagging pathways.
 - k) Demonstrate fast, slow, and moderate speed movements.
 - l) Demonstrate consecutive jumps (more than one) with a self-turn rope.
 - m) Demonstrate consecutive jumps with a long rope (student-turn).

Anatomical Basis of Movement

- 1.2 The student will identify basic anatomical structures and basic spatial awareness concepts.
 - a) Identify where the brain is located.
 - b) Explain that muscles attach to bones to help the body move.
 - c) Describe how the heart and lungs work together to keep the body moving.
 - d) Explain that the heart is a muscle that grows stronger with movement.
 - e) Demonstrate appropriate use of personal and general space.

Fitness Planning

- 1.3 The student will identify changes in the body that occur during moderate-to-vigorous physical activity.

- a) Identify activities to do at home to help the body move and grow.
- b) Identify one activity that increases heart and breathing rates to make the heart stronger.
- c) Describe and demonstrate activity at two or more intensity levels.

Social Development

- 1.4 The student will demonstrate basic knowledge and skills for safe and cooperative play, individually and with others, without reminders from teacher.
- a) Work cooperatively, and demonstrate safe equipment use with peers.
 - b) Demonstrate safety rules for activity.
 - c) Demonstrate safe use of space.
 - d) Identify classroom (procedural) rules.

Energy Balance

- 1.5 The student will identify basic nutrition concepts of energy balance.
- a) Name the food groups as identified by the U.S. Department of Agriculture (USDA).
 - b) Name one food from each (USDA) food group.
 - c) Explain that the body needs water.
 - d) Explain that physical activity uses energy from foods.

Grade Two

Students in grade two focus on mature patterns, not on traditional games, while participating in a variety of movement experiences to develop fundamental motor skills and patterns. They vary movement patterns and begin to combine skills in educational game, dance, and gymnastic activities. Students progress in skill development and in understanding key elements of fundamental movement skills, including movement concepts, major muscles and bones, health-related fitness concepts, energy balance concepts, and the benefits of physical activity. Students work cooperatively and responsibly in groups and begin to build skills to meet movement challenges. They participate in physical activities at school and identify opportunities to participate in regular physical activity outside of school.

Motor Skill Development

- 2.1 The student will demonstrate approaching (at least two critical elements) and mature form (all correct critical elements) of locomotor, non-locomotor, and manipulative skills.
- Demonstrate individually and with a partner the mature forms of manipulative skills for underhand throwing, catching underhand tossed or thrown ball, kicking/passing stationary ball to a partner or to a target, foot dribble with control while walking, striking, consecutive upward volleying with hand(s), and stationary hand dribbling.
 - Demonstrate a simple educational gymnastic sequence, including balance, roll, transfer of weight from feet to hands, and flight.
 - Demonstrate moving to a rhythm by performing basic dance sequences (teacher- or student-led dances).
 - Demonstrate mature form for hop, jump, leap, skip, run, jog, gallop, and slide.
 - Demonstrate and differentiate between jogging and running.
 - Demonstrate manipulative skills using increased force (hard) and decreased force (soft) with control.
 - Demonstrate mature form for jumping forward with self-turn rope and jumping with long rope (student turn).
 - Demonstrate approaching mature form (at least two critical elements) for overhand throw, dribbling with dominant/preferred hand while walking, kicking moving ball, striking ball/object with short-handled implement upward and forward, striking/batting ball off tee, and jumping backward with self-turn rope.

Anatomical Basis of Movement

- 2.2 The student will identify major musculoskeletal structures and the cardiorespiratory system and explain the importance of spatial awareness while moving.
- Describe the concept of relationships (e.g., over, under, around, in front of, behind, through) in dynamic movement situations.
 - Explain the importance of spatial awareness (personal and general space) in static and dynamic movement situations.
 - Explain that the brain sends a message to the body to move.
 - Identify major muscles, to include quadriceps, biceps, abdominals, and heart.
 - Explain that muscles tense to keep the body in a balanced position.
 - Identify major bones, to include skull, ribs, and spine.
 - Identify the major structures of the cardiorespiratory system (heart and lungs).

Fitness Planning

- 2.3 The student will describe the components of fitness and identify physical activities that promote aerobic capacity, muscular strength, endurance, flexibility, and body composition.
- Describe muscular strength as important in lifting /moving heavy objects.
 - Describe muscular endurance as important in moving throughout the day.

- c) Describe flexibility as important in moving in many directions.
- d) Describe cardiorespiratory endurance as important for maintaining a healthy heart.
- e) Describe body composition as the components that make up a person's body weight (percentages of fat, bone, water, and muscle in the human body).
- f) Identify one activity to promote each component of fitness (cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition).
- g) Identify opportunities to participate in regular physical activity outside of school.

Social Development

- 2.4 The student will identify and apply cooperative, respectful, and safe behaviors in physical activity settings.
- a) Identify one activity that is enjoyed and done outside of physical education class.
 - b) Identify one activity that is challenging and one way to improve the activity.
 - c) Demonstrate cooperative skills, to include taking turns and sharing equipment.
 - d) Demonstrate safe participation individually and with others.
 - e) Identify two class safety rules.

Energy Balance

- 2.5 The student will describe the energy intake components of energy balance and physical health and development.
- a) Explain that dairy is important for bone growth.
 - b) Identify examples of healthy snacks.
 - c) Identify different hydration choices.
 - d) Explain that choosing nutritious foods and being physically active are components of being healthy.

Grade Three

Skill development remains a central focus for students in grade three as they begin to accept feedback from and provide appropriate feedback to others. Students refine, vary, and combine skills in complex situations and demonstrate more proficient movement patterns in educational games, dance, and gymnastic activities to become confident and competent movers. Students identify critical elements (small, isolated parts of the whole skill or movement) and apply them in their movement. They develop fitness knowledge and can relate regular physical activity to energy balance and health benefits. Students continue to build knowledge of body structures and systems. They know safe practices, rules, and procedures and apply them with little or no reinforcement. Students work cooperatively with peers and understand that there are many differences in movement skill and ability levels among their classmates.

Motor Skill Development

- 3.1 The student will demonstrate mature form (all critical elements) for a variety of skills and apply skills in increasingly complex movement activities.
 - a) Demonstrate the critical elements for overhand throw and catch using a variety of objects; control, stop, and kick ball to stationary and moving partners/objects; dribble with dominant/preferred hand/foot; pass a ball to a moving partner; strike ball/object with short handled implement upward and forward; strike/bat ball off tee (correct grip, side to target, hip rotation); jump/land horizontally (distance) and vertically (height).
 - b) Demonstrate a self-turn rope sequence of four different jumps.
 - c) Demonstrate simple dances in various formations.
 - d) Perform an educational gymnastic sequence with balance, transfer of weight, travel, and change of direction.
 - e) Create and perform a dance sequence with different locomotor patterns, levels, shapes, pathways, and flow.

Anatomical Basis of Movement

- 3.2 The student will identify major structures of the body, to include body systems, muscles, and bones, and identify basic movement principles.
 - a) Apply the concept of open space while moving.
 - b) Identify major muscles, to include hamstrings and triceps.
 - c) Describe the components and function of the cardiorespiratory system, to include heart, lungs, and blood vessels.
 - d) Identify major bones, to include femur, tibia, fibula, humerus, radius, and ulna.
 - e) Name one activity and the muscles and bones that help the body perform the activity.

Fitness Planning

- 3.3 The student will describe the components and measures of health-related fitness.
 - a) Explain the health-related components of fitness (cardiorespiratory endurance, muscular strength, muscular endurance, flexibility, and body composition).
 - b) Identify one measure for each component of health-related fitness.
 - c) Demonstrate one activity for each component of health-related fitness.
 - d) Identify that there are levels of intensity in moderate to vigorous physical activity (MVPA).

Social Development

- 3.4 The student will demonstrate an understanding of the purposes for rules, procedures, and respectful behaviors, while in various physical activity settings.
 - a) Explain the importance of rules for activities.
 - b) Provide input into establishing and demonstrate implementation of rules and guidelines for appropriate behavior in physical activity settings.
 - c) Describe the importance of cooperating and work cooperatively with peers to achieve a goal.

- d) Implement teacher feedback to improve performance.
- e) Provide appropriate feedback to a classmate.
- f) Describe one group physical activity to participate in for enjoyment.

Energy Balance

3.5 The student will describe energy balance.

- a) Explain that energy balance relates to good nutrition (energy in) and physical activity (energy out).
- b) Identify one food per group to create a healthy meal that meets USDA guidelines.
- c) Identify healthy hydration choices and the amount of water needed for the body to function, using the formula one ounce of water per two pounds of body weight.
- d) Identify the macronutrients (fat, protein, carbohydrates).
- e) Identify foods that are healthy sources of each macronutrient.

Grade Four

In grade four, students make continuous progress across all fundamental motor patterns. Proficient movement patterns are possible as students combine locomotor and manipulative skills in increasingly complex situations. Students create sequences in educational dances and gymnastics. They apply movement concepts and principles and knowledge of anatomical structures in individual movement performances, and tactical strategies in modified activities. Fitness assessment is appropriate at this grade level, and students interpret the results of their assessments and set personal goals based on the results. Students exhibit appropriate etiquette, integrity, and conflict-resolution skills; and they apply proper rules and procedures.

Motor Skill Development

- 4.1 The student will refine movement skills and demonstrate the ability to combine them in increasingly complex movement environments/activities.
 - a) Demonstrate mature form for specialized locomotor, non-locomotor, and manipulative skill combinations in game and modified sports activities, to include overhand throw and catch with a partner while moving, overhand throw to a target for distance, dribbling and passing soccer ball with varying speed while moving, dribbling with non-dominant/non-preferred hand walking and dominant/preferred hand at various speeds, catching thrown objects, striking a ball with short-handled and long-handled implement, and underhand volley/strike.
 - b) Create and perform a partner dance sequence with an apparent beginning, middle, and end that integrates shapes, levels, pathways, and locomotor patterns.
 - c) Create and perform a continuous educational gymnastic sequence that combines four or more of the following movements: traveling, balancing, rolling, and other types of weight transfer.
 - d) Demonstrate the use of pacing, speed, and endurance in a variety of activities.
 - e) Demonstrate the ability to self-pace in a cardiovascular endurance activity.
 - f) Provide appropriate feedback to a peer to improve performance.
 - g) Create and perform a jump-rope routine (self-turn or long rope).

Anatomical Basis of Movement

- 4.2 The student will identify major structures and begin to apply knowledge of anatomy to explain movement patterns.
 - a) Identify and describe the major components of the cardiorespiratory system, to include heart, lungs, and blood vessels.
 - b) Identify major muscle groups, to include deltoid and gluteal.
 - c) Identify major components of the skeletal system, to include sternum, vertebrae, patella, and phalange.
 - d) Locate radial and/or carotid pulse.
 - e) Identify the bones and muscles needed to perform one fitness activity and one skilled movement.
 - f) Identify the concept of closing space during movement sequences.

Fitness Planning

- 4.3 The student will apply knowledge of health-related fitness, gather and analyze data, and set measurable goals to improve fitness levels.
 - a) Describe the components of health-related fitness and list associated measurements (cardiorespiratory endurance/aerobic capacity, muscular strength and endurance, flexibility, body composition).
 - b) Analyze baseline data from a standardized health-related criterion-referenced test (Virginia wellness-related criterion-referenced fitness standards, CDC guidelines).
 - c) Create a SMART (specific, measurable, attainable, realistic, timely) goal for at least one health-related component of fitness to improve or maintain fitness level.

- d) Identify activities that can be done at school and activities that can be done at home to meet fitness goals.
- e) Analyze post-fitness testing results, and reflect on goal progress/attainment.

Social Development

- 4.4 The student will demonstrate positive interactions with others in cooperative and competitive physical activities.
- a) Identify a group goal and the strategies needed for successful completion while working productively and respectfully with others.
 - b) Identify and demonstrate conflict-resolution strategies for positive solutions in resolving disagreements.
 - c) Define *etiquette* and demonstrate appropriate etiquette and application of rules and procedures.
 - d) Define *integrity* and describe the importance of integrity in a physical activity setting.

Energy Balance

- 4.5 The student will explain the nutrition and activity components of energy balance.
- a) Identify the number of calories per gram of fat (9), protein (4), and carbohydrates (4).
 - b) Explain the uses of salt and sugar and the harm of excessive salt and sugar intake.
 - c) Describe how the body uses each macronutrient (fat, protein, carbohydrates).
 - d) Calculate the calories per gram of macronutrients for a variety of foods.
 - e) Explain the importance of hydration.
 - f) Compare different hydration choices.
 - g) Explain the role of moderate to vigorous physical activity (MVPA) for energy balance.

Grade Five

Students in grade five apply movement principles and concepts and knowledge of anatomical structures and functions to enhance their movement performance, personal fitness, and game strategy and tactics. They develop proficiency in physical activities, dances, and educational gymnastics. Students demonstrate specialized skills alone, with a partner, or in a small group. They access and use resources to plan and improve personal fitness as they exhibit a physically active lifestyle. Students continue to develop responsible personal and social behaviors as they work with others in safe and respectful ways.

Motor Skill Development

- 5.1 The student will demonstrate mature movement forms, create movement patterns, and begin to describe movement principles.
- Demonstrate mature form in locomotor, non-locomotor, and manipulative skill combinations in more complex and dynamic environments and modified sports activities, to include overhand and underhand throw and catch, execution to a target, hand dribble, foot dribble, consecutive striking with a partner over a net or against a wall, and striking a ball while stationary and moving.
 - Create and perform an educational gymnastic sequence including travel, roll, balance, and weight transfer, with smooth transitions and changes of direction, shape, speed, and flow.
 - Create and perform individual or group rhythm/dance sequences including American and international dances and a jump-rope routine (self-turn or long rope).
 - Demonstrate use of space in a variety of activities.
 - Demonstrate accuracy in a variety of activities.
 - Demonstrate use of force in a variety of activities.
 - Apply concepts of direction and force to strike an object with purpose and accuracy.

Anatomical Basis of Movement

- 5.2 The student will apply anatomical knowledge and movement strategies in complex movement activities.
- Identify components of major body systems, to include cardiorespiratory, vascular, muscular, and skeletal.
 - Apply knowledge of body systems, bones, and muscles to accurately describe a variety of specific movements such as a ball strike, overhand throw, or volley.
 - Describe concepts of direction and force used to strike an object with purpose and accuracy.

Fitness Planning

- 5.3 The student will use personal fitness assessment data to enhance understanding of physical fitness.
- Identify methods for evaluating and improving personal fitness such as health-related criterion referenced tests, heart rate, body mass index (BMI), and pedometer data.
 - Compare and analyze fitness data to health-related criterion-referenced standards (Virginia wellness-related fitness standards, Fitnessgram®, CDC guidelines) to assess levels of personal fitness and identify strengths and weaknesses.
 - Create a basic personal fitness plan for at least one health-related component of fitness, to include baseline fitness data, SMART goal, activities that will address the goal, log of activities inside and outside of school, reassessment data (post-data) and reflection of goal progress/attainment.
 - Explain the FITT (frequency, intensity, time, and type) principle.
 - Calculate resting heart rate and calculate heart rate during a variety of activities.
 - Explain the relationship between heart rate and cardiorespiratory fitness.

Social Development

- 5.4 The student will participate in establishing and maintaining a safe environment for physical activities.
- a) Create and implement rules and consequences for one or more activities.
 - b) Create and implement safety rules for at least one activity.
 - c) Create and implement etiquette for one activity.
 - d) Explain the importance of inclusion in physical activity settings.
 - e) Describe and demonstrate respectful behavior in physical activity settings.

Energy Balance

- 5.5 The student will identify and explain the nutrition component and activity guidelines for energy balance.
- a) Explain RDA (Recommended Dietary Allowance).
 - b) Explain that there are different RDA recommendations for children, teens, and adults.
 - c) Explain the effect of portion size on RDA.
 - d) Explain the purpose of vitamins and minerals.
 - e) Evaluate components of food labels for a variety of foods, to include macronutrients, RDA, and portion size.
 - f) Explain that physical activity guidelines recommend 60 minutes of moderate to vigorous physical activity (MVPA) every day.

Grade Six

Students in grade six apply fundamental skills and knowledge of anatomical structures and movement principles to build movement competence and confidence through acquisition, performance, and refinement of skills. Cooperative and competitive small-group games are appropriate as well as outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, individual performance activities, and sports (net/wall, striking/fielding, and goal/target), with an emphasis on developing skills and tactical understanding. Students use feedback to initiate and maintain practice to improve skill performance. Students assess their health-related fitness status and set reasonable and appropriate goals for development, maintenance, and improvement. Students in grade six will explain the connection between energy balance and nutrition guidelines, meal planning, and heart rate. Social interaction becomes more complex as peer pressure becomes increasingly pronounced, impacting individual performance. Students solve problems and make responsible decisions as they work together. They identify and seek opportunities to participate in regular physical activity at school and outside the school environment.

Motor Skill Development

- 6.1 The student will demonstrate and apply mature movement forms in a variety of activities and identify the six components of skill-related fitness.
- Combine and apply mature locomotor and manipulative skills into specialized sequences, to include overhand and underhand throwing and catching, execution to a target, hand and/or foot dribbling, volleying/striking and/or batting ball; and apply sequences, to include change of direction, speed, patterns, pathways, and spatial relationships in partner and small-group modified game-play that includes dynamic and unpredictable situations.
 - Create and perform movement sequences in a rhythmic or dance activity.
 - Identify the six components of skill-related fitness (agility, balance, coordination, power, reaction time, and speed).
 - Analyze movement situations for direction, speed, accuracy, and pathways to improve performance.

Anatomical Basis of Movement

- 6.2 The student will apply both movement principles and concepts and knowledge of anatomical structures to movement-skill performance.
- Refine and adapt individual and group activity skills by applying concepts of relationships, effort, spatial awareness, speed, and pathways.
 - Apply knowledge of the skeletal system to identify types of joints and associated bones, to include ball-and-socket joint, pivot joint, and hinge joint.
 - Apply knowledge of anatomy and joint types to accurately describe a variety of specific movements such as throwing/catching, striking, volleying, and dribbling.
 - Describe basic offensive and defensive strategies in noncomplex, modified, and small-sided activities.

Fitness Planning

- 6.3 The student will apply skills of measurement, analysis, goal setting, problem solving, and decision making to improve or maintain physical fitness.
- Use measurement and assessment tools and data (e.g., criterion-referenced health-related fitness standards, Internet, software data-management systems, heart-rate monitors, pedometers, skinfold calipers) to complete a self-assessment and develop goals for improvement in at least two fitness components.
 - Describe and apply the components of the FITT (frequency, intensity, time, type) principle and their relationship to implementing safe and progressive personal fitness programs for aerobic capacity, muscle fitness, and flexibility.
 - Define and calculate resting heart rate (RHR) and describe its relationship to aerobic fitness.
 - Describe how being physically active leads to a healthy body.

- e) Interpret fitness data comparing individual scores to health-related criterion-referenced standards (Virginia wellness-related fitness standards, Fitnessgram®, CDC guidelines).
- f) Develop a personal fitness plan using baseline data to address one or more components of health-related fitness, to improve or maintain fitness level to include SMART goals, action plan, and documentation of activities inside and outside of school.
- g) Reassess health-related fitness components and reflect on personal fitness goals at least twice during the school year.
- h) Describe rate of perceived exertion and identify associated activity levels.

Social Development

- 6.4 The student will demonstrate and apply skills of communication, conflict resolution, and cooperation to achieve individual and group goals that apply to working independently and with others in physical activity settings.
- a) List and demonstrate problem solving, conflict resolution, and decision-making skills.
 - b) Compare and critique rules, safety procedures, and etiquette for two different physical activities.
 - c) Reflect on completion of an improvement plan for a personally challenging skill or activity.
 - d) Describe the benefits of competitive and non-competitive physical activities.
 - e) Demonstrate integrity and apply rules/etiquette for a team-building activity.
 - f) Create and implement strategies, to include others and promote safe participation in physical activities.

Energy Balance

- 6.5 The student will explain the connection between energy balance and nutrition guidelines, meal planning, and exercise intensity.
- a) Create a one-day meal and snack plan based on Recommended Dietary Allowances (RDA), portions, macronutrients, vitamins, minerals, hydration, sugar, and salt.
 - b) Describe the relationship between resting heart rate and exercise intensity.
 - c) Explain the impact of physical activity guidelines on energy expenditure.

Grade Seven

Students in grade seven continue to develop competence in modified versions of various game/sport, rhythmic, and recreational activities. They vary movement during dynamic and unpredictable game situations. Recreational pursuits become an additional curriculum option, broadening lifelong physical activity options. The ability to analyze skill performance through observing and understanding critical elements (small, isolated parts of the whole skill or movement) is increasingly apparent, as is the application of basic scientific principles of anatomical structures, movement principles, energy balance, and personal fitness. Students relate the importance of physical activity to health, focusing particularly on obesity and stress. Students achieve and maintain personal fitness standards and create plans by setting reasonable and appropriate goals for improvement or maintenance of health-related fitness. Students continue to develop social skills and cooperative behaviors by demonstrating problem solving, conflict resolution, communication skills, appropriate etiquette, integrity, and respect for others.

Motor Skill Development

- 7.1 The student will demonstrate competence and apply movement concepts in modified versions of various game/sport, rhythmic, and recreational activities.
- Demonstrate and apply mature movement forms and skill combinations competently in a variety of cooperative and tactical activities that include dynamic and unpredictable situations.
 - Demonstrate offensive strategies and tactics, to include creating open space, skilled movement, speed, accuracy, and selection of appropriate skill/tactic to gain offensive advantage.
 - Demonstrate basic abilities and safety precautions in recreational pursuits (e.g., in-line skating, orienteering, hiking, cycling, ropes courses, backpacking, canoeing, rock climbing).
 - Create and demonstrate movements appropriate to a variety of rhythm patterns in selected folk, social, world, country, square, contemporary, and line dances.
 - Describe and demonstrate how movement is stabilized, to include balance (center of gravity and center of support) and planes of movement.
 - Demonstrate the movement learning progression (practice, self or peer assess, correct, practice at a higher level, and reassess) for a specific skill or activity.

Anatomical Basis of Movement

- 7.2 The student will understand and apply movement principles and concepts and knowledge of major body structures.
- Identify the “core muscles,” to include pelvis, lower back, hips, gluteal muscles, and abdomen, and explain their role in stabilizing movement.
 - Apply biomechanical principles (e.g., center of gravity, base of support) to understand and perform skillful movements.
 - Describe the planes of motion in which movement occurs, to include sagittal plane, frontal plane, and transverse plane.
 - Analyze skill patterns and movement performance of self and others, detecting and correcting mechanical errors and describing balance in the planes of movement for selected movements.

Fitness Planning

- 7.3 The student will apply concepts and principles of training and fitness-planning skills to improve physical fitness.

- a) Identify safe practices for improving physical fitness.
- b) Complete a self-assessment of health-related fitness and develop a comprehensive personal fitness plan, including SMART (specific, measurable, attainable, realistic, timely) goals, action plan that incorporates the FITT (frequency, intensity, time, and type) principle, timeline, documentation of activities inside and outside of school, roadblocks/barriers and solutions, mid-year and end-of-year assessments, and reflection on progress for improving at least three self-selected components of health-related fitness.
- c) Use a variety of resources, including available technology, to evaluate, monitor, and record activities for fitness improvement.
- d) Analyze the relationships among physical activity, caloric intake, and body composition.
- e) Compare and contrast aerobic and anaerobic capacity and muscle strength and endurance.
- f) Create and implement an activity plan to meet guidelines of 60 minutes a day of moderate to vigorous physical activity.

Social Development

- 7.4 The student will demonstrate and apply skills to work independently and with others in physical activity settings.
- a) Apply safety procedures, rules, and appropriate etiquette in physical activity settings by self-officiating modified physical activities/games.
 - b) Create guidelines and demonstrate how to solve problems and resolve conflicts in activity settings.
 - c) Explain the importance of cooperating with classmates, and demonstrate supportive behaviors that promote the inclusion and safety of others.
 - d) Describe and demonstrate strategies for dealing with stress, such as deep breathing, guided visualization, and aerobic exercise.
 - e) Demonstrate effective communication skills by providing feedback to a peer, using appropriate tone and other communication skills.
 - f) Identify positive mental and emotional aspects of participating in a variety of physical activities.
 - g) Describe how participation in physical activities creates enjoyment.
 - h) Identify specific safety concerns associated with at least one activity that includes rules, equipment, and etiquette.

Energy Balance

- 7.5 The student will describe rate of perceived exertion and nutrients (energy) needed for a variety of activities and explain the importance of sleep for energy balance.
- a) Describe a Rate of Perceived Exertion (RPE) scale.
 - b) Explain the connection between an RPE scale and heart rate, and the body's response to physical activity.
 - c) Define and describe the anaerobic and aerobic energy systems.
 - d) Identify the nutrients needed for optimal aerobic and anaerobic capacity and for muscle strength and endurance.
 - e) Create a snack plan including foods and beverages consumed before, during, and after a self-selected vigorous physical activity addressing nutrition needs for each phase and explaining the impact on and relationship to RDA, portions, macronutrients, vitamins, minerals, hydration, sugar, and salt.
 - f) Calculate resting heart rate (RHR) and describe its relationship to aerobic fitness and an RPE scale.
 - g) Explain the importance of sleep for energy balance.
 - h) Explain energy balance and how it leads to a healthy body.

Grade Eight

Students in grade eight demonstrate competence in skillful movement in modified, dynamic game/sport situations and in a variety of rhythmic and recreational activities. They transition from modified versions of movement forms to more complex applications across all types of activities. The grade-eight student applies knowledge of major body structures to explain how body systems interact with and respond to physical activity and how structures help the body create movement. Students will explain the relationship between nutrition, activity, and body composition to deepen understanding of energy balance. They will demonstrate socially responsible behavior as they show respect for others, make reasoned and appropriate choices, resist negative peer pressure, and exhibit integrity and fair play to achieve individual and group goals in the physical activity setting. Students are able to set goals, track progress, and participate in physical activities to improve health-related fitness. They have a repertoire of abilities across a variety of game/sport, dance, and recreational pursuits and begin to develop competence in specialized versions of lifelong game/sport activities.

Motor Skill Development

- 8.1 The student will apply and demonstrate movement concepts and skills in modified versions of various game/sport, rhythmic, and recreational activities.
- Demonstrate and apply movement forms to a variety of cooperative and tactical activities that include dynamic and unpredictable situations with a focus on defensive strategies, to include reducing space, transitioning from offense to defense quickly, communicating with teammates, and selecting appropriate tactics to gain defensive advantage.
 - Create a rhythmic movement sequence to music as an individual or in a group.
 - Demonstrate skill-related components of fitness (agility, balance, coordination, power, reaction time, and speed) specific to a variety of activities.
 - Apply and demonstrate biomechanical principles of force, motion (laws of motion), rotation, and energy.
 - Demonstrate balance (center of support and center of gravity) in a variety of activities.
 - Demonstrate physiological principles of warm-up, cool down, overload, specificity, and progression to improve performance.
 - Demonstrate use of technology tools to analyze and improve performance.
 - Describe how movement is created in activities that involve agility, power, coordination, reaction time, speed, force, motion, rotation, and energy.
 - Explain the role of balance (center of support, center of gravity, planes of movement) in creating movement.
 - Analyze movement performance and utilize feedback to learn or improve the movement skills of self and others.

Anatomical Basis of Movement

- 8.2 The student will apply movement principles and concepts and apply knowledge of major body structures to explain how body systems interact and respond to physical activity and movement.
- Explain how body systems interact with one another during physical activity.
 - Identify and describe biomechanical principles (e.g., spin, rebound, effects of levers) to understand skillful movements.
 - Explain how offensive and defensive tactics and strategies are used to gain an advantage offensively and defensively.
 - Analyze performance in a variety of selected skills/activities using movement concepts of agility, power, coordination, reaction time, speed, force, motion, rotation, and energy of self and partner.

- e) Analyze movement progressions (practice, self or peer assess, correct, practice at a higher level, and reassess) of a specific skill and utilize feedback to improve the movement skills of self and/or others.
- f) Describe effects of exercise/activity on physical movement, body systems, and brain development.
- g) Describe how muscles move bones to create paired movement by relaxing and contracting.
- h) Identify types of joints and associated movements, to include ball and socket (flexion/extension), pivot (rotation of one bone around another), and hinge (flexion/extension).
- i) Apply knowledge of anatomy to accurately describe movements in relation to type of joint and associated movement/motion, associated bones and muscles, and type of muscle contraction.

Fitness Planning

- 8.3 The student will apply self-assessment skills and use technology to create and implement a personal fitness plan to improve or maintain personal fitness.
- a) Self-assess level of physical activity and personal fitness on all components of health-related fitness, including body composition, and develop a plan, including SMART (specific, measurable, attainable, realistic, timely) goals, and action-plan strategies that include documentation of activities, mid-year and end-of-year assessments, reflection on progress, and timeline for maintenance or improvement.
 - b) Define and describe specificity, overload, and progression in relation to improving personal fitness.
 - c) Demonstrate use of technology tools to assess, monitor/record, and improve personal fitness.
 - d) Create and implement an activity plan to meet physical activity guidelines of 60 minutes a day that includes warm-up, cool down, and appropriate intensity levels.
 - e) Monitor heart rate before, during, and after moderate to vigorous physical activity (MVPA).

Social Development

- 8.4 The student will describe and apply a variety of social and safety skills to achieve individual and group goals in a variety of physical activity settings.
- a) Describe and demonstrate best practices for participating safely in physical activity, exercise, and dance (e.g., injury prevention, proper alignment, hydration, use of equipment, implementation of rules, sun protection).
 - b) Describe and demonstrate appropriate encouragement and feedback to peers without prompting from the teacher.
 - c) Identify and demonstrate proper etiquette, respect for others, integrity, and teamwork while engaging in physical activity and/or social dance.
 - d) Demonstrate basic movements used in stress-reducing activities (e.g., yoga, Pilates, tai chi).
 - e) Apply communication skills and strategies that promote team/group dynamics.
 - f) Describe and demonstrate conflict-resolution skills.
 - g) Apply problem solving skills in cooperative and dynamic physical activities and/or dance settings.
 - h) Analyze and compare social and emotional benefits of participation in a variety of activities.
 - i) Identify opportunities for social interaction through physical activity in the community.

Energy Balance

- 8.5 The student will explain the relationship of caloric intake, caloric expenditure, and body composition.
- a) Describe the relationship between poor caloric intake and health risk factors.
 - b) Explain the role of energy balance in weight management and body composition.
 - c) Describe types of body-composition measures and demonstrate appropriate use of one measure.
 - d) Explain a Rate of Perceived Exertion (RPE) scale and how it relates to energy expenditure.
 - e) Describe how an RPE scale can be used to adjust workout intensity during physical activity.

- f) Describe the body's physiological responses to warm-ups and cool downs.
- g) Identify activities that use the anaerobic and aerobic energy systems.
- h) Create a one-week meal plan, including snacks and physical activity, based on Recommended Dietary Allowances (RDA), portions, macronutrients, vitamins, minerals, hydration, sugar, and salt.

Grade Nine

Students in grade nine complete the transition from modified versions of movement forms to more complex applications across all types of physical activities. This may include outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, individual performance activities, and games and sports (net/wall, striking/fielding, and goal/target). Students demonstrate the ability to use basic skills, strategies, and tactics in a variety of lifetime physical activities. Students demonstrate more specialized knowledge in identifying and applying key movement concepts and principles. Students will explain the importance of energy balance and nutritional needs of the body to maintain optimal health and prevent chronic disease. They self-assess their skill performance and develop a personal physical activity program aimed at improving motor skills, movement patterns, and strategies essential to performing a variety of physical activities. They apply their understanding of personal fitness to lifelong participation in physical activity. Students demonstrate independence in making choices, respecting others, avoiding conflict, resolving conflicts appropriately, and using elements of fair play and ethical behavior in physical activity settings. Students demonstrate the knowledge, skills, and abilities required to plan for and improve components of fitness and achieve and maintain a health-enhancing level of personal fitness.

Motor Skill Development

- 9.1 The student will perform all basic movement skills and demonstrate movement and biomechanical principles in a variety of activities that may include outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, individual performance activities, and games and sports (net/wall, striking/fielding, and goal/target(s)).
- Demonstrate proficiency and refinement in locomotor, non-locomotor, and manipulative skills through appropriate activities (e.g., outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, individual performance activities, games and sports [net/wall, striking/fielding, and goal/target]).
 - Design, implement, evaluate, and modify a practice plan for a self-selected skill, to include the motor learning process of analysis of performance; application of principles of movement and training; goal setting; and improvement of personal skills through practice, correction, practicing at a higher level, and reassessment.
 - Apply the concepts and principles of levers, force, motion, and rotation in a variety of activities.
 - Apply physiological principles of warm-up, cool down, overload, specificity, and progression.
 - Apply biomechanical principles of balance, energy, and types of muscle contractions to a variety of activities.
 - Demonstrate competency in one or more specialized skills in health-related fitness activities.

Anatomical Basis of Movement

- 9.2 The student will explain the structures and functions of the body and how they relate to and are affected by human movement.
- Explain and apply selected scientific principles, to include physiological (warm-up, cool down, overload, specificity, and progression) and biomechanical (levers, types of muscle contractions, and force) that aid in the improvement of movement skills.
 - Analyze and evaluate proficient and efficient movement in relation to how movement is directed, to include the type of muscle action that directs a movement (concentric, eccentric, and isometric), the direction the body part moves relative to its joints (abduction, adduction, flexion, and extension), and planes of movement.
 - Apply the concepts and principles of the body's metabolic response to short- and long-term physical activity.
 - Explain the body's response to the principles of specificity, overload, and progression (SOP) in relation to frequency, intensity, time, and type of exercise (FITT).

- e) Explain the anaerobic respiration (ATP-PC and Lactic Acid System) and aerobic respiration systems used for energy during activity.
- f) Analyze movement performance, and utilize feedback to learn or to improve the movement skills of self and others.

Fitness Planning

- 9.3 The student will evaluate current fitness behaviors and demonstrate achievement and maintenance of a health-enhancing level of personal fitness by designing, implementing, self-assessing, and modifying a personal fitness program.
- a) Demonstrate program-planning skills by assessing and analyzing personal fitness levels, setting goals, devising strategies, making timelines for a personal physical fitness plan, and evaluating the components and progress of the personal fitness plan.
 - b) Apply the FITT (frequency, intensity, time, type) principle and other principles of training such as overload, specificity, and progression, in accordance with personal goals to the personal fitness plan.
 - c) Explain the characteristics, including scientific principles and concepts, of safe and appropriate muscular-stretching, muscular-strengthening, and cardiorespiratory exercise programs to improve the health-related components of fitness.
 - d) Explain the relationship between heart rate, training zones, and exercise intensity, to include measures (e.g., heart rate monitors, pedometers, accelerometers) and appropriate training zones to meet exercise and personal fitness goals.
 - e) Demonstrate appropriate techniques for resistance-training activities, machines, and/or free weights.
 - f) Calculate resting heart rate, target heart rate, and blood pressure.
 - g) Identify types of strength exercises (isometric, concentric, eccentric) and stretching exercises (static, proprioceptive neuromuscular facilitation, dynamic) for personal fitness development (e.g., strength, endurance, range of motion).
 - h) Define and describe terms and activities associated with fitness, to include set, repetition, isometric, isotonic, isokinetic, core, upper body, and lower body exercises.

Social Development

- 9.4 The student will explain and demonstrate the skills needed to be safe, responsible, and respectful in all physical activity settings.
- a) Identify and demonstrate proper etiquette, respect for others, integrity, and teamwork while engaging in a variety of activities.
 - b) Explain the impact of sports and activities in developing respect for the unique characteristics, differences and abilities of peers.
 - c) Apply conflict-resolution skills in physical activity settings.
 - d) Identify an opportunity for social support in a self-selected physical activity.
 - e) Apply communication skills and strategies that promote positive team/group dynamics.
 - f) Apply problem-solving and critical-thinking skills in physical activity settings, both as an individual and in groups.
 - g) Apply best practices for participating safely in physical activity, exercise, and dance (e.g., injury prevention, proper alignment, hydration, use of equipment, implementation of rules, sun protection).
 - h) Analyze and compare psychological benefits derived from various physical activities (e.g., decreased stress and anxiety, increased self-esteem, increased mental alertness, improved mood).

Energy Balance

- 9.5 The student will explain the importance of energy balance and evaluate current caloric intake and caloric expenditure to maintain optimal health and prevent chronic disease.
- a) Explain the body's physiological response to sugar, sodium, and fat.
 - b) Assess and analyze current energy balance, to include intake and expenditure, activity levels, food choices, and amount of sleep.
 - c) Explain body composition, using body mass index (BMI) and other measures, the variety of body types, and healthy body weight.
 - d) Design and implement a plan to maintain an appropriate energy balance for a healthy, active lifestyle, to include intake, expenditure (levels of intensity), and sleep.

Grade Ten

Students in grade 10 are proficient in fundamental movement skills and skill combinations and are competent in self-selected physical activities that they are likely to pursue throughout life including outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, selected individual performance activities, and net/wall and target games. They understand and apply concepts and principles of mechanics and anatomy in relation to human movement and apply the concepts and principles of the body's metabolic response to short-term and long-term physical activity. Students are good leaders and good followers; they respect others, and anticipate and avoid unsafe physical activity situations. They develop the ability to understand and they anticipate how physical activity interests and abilities change across a lifetime. Students demonstrate competency in lifelong physical activities and plan, implement, self-assess, and modify a personal fitness plan. Students are prepared to lead a physically active lifestyle.

Motor Skill Development

- 10.1 The student will demonstrate proficiency and apply the concepts and principles of exercise physiology, biomechanics, and anatomy in a variety of lifetime activities that may include outdoor pursuits, fitness activities, dance and rhythmic activities, aquatics, selected individual performance activities, and net/wall and target games in at least two self-selected, lifelong, skill-related physical activities.
- Demonstrate skill attainment in one or more lifetime activities.
 - Apply and demonstrate knowledge of how movement is created, directed, and stabilized in one or more lifetime activities.
 - Identify and demonstrate movement activities in each plane of movement (frontal, sagittal, and transverse) and activities that occur in multiple planes.
 - Demonstrate appropriate and proper use of equipment in one or more lifetime activities.

Anatomical Basis of Movement

- 10.2 The student will apply knowledge of biomechanics and anatomy and analyze and evaluate the ability to move proficiently and efficiently in a variety of lifetime activities.
- Explain how the body responds to energy needs for anaerobic and aerobic activities, to include fast and slow-twitch muscle fibers, and anaerobic respiration (ATP-PC and Lactic Acid System) and aerobic respiration.
 - Analyze movement activities for component skills and movement patterns for one or more lifetime activities.
 - Identify and explain the relationship of opposing muscle groups (agonist/antagonist).
 - Design and implement a program for strength and conditioning.
 - Explain why blood pressure is an indicator of personal health.
 - Apply rate of perceived exertion (RPE) and pacing to a conditioning plan that meets the needs of one or more lifetime activities.

Fitness Planning

- 10.3 The student will demonstrate the ability to apply basic principles of training and scientific concepts and principles to evaluate current fitness behaviors and identify strategies needed for health-enhancing fitness for the present and into adulthood.
- Create a fitness and activity plan for the present and a potential plan for the future (postsecondary education, college/career) to address the health-related components of fitness.
 - Use a variety of resources, including available technology, to analyze current fitness and activity levels, and to improve physical activity and personal fitness.
 - Identify fitness needs to prevent health concerns in the present and into the future.
 - Identify the impact of life choices, economics, motivation, accessibility, exercise adherence, and participation in physical activity in college or career settings.

- e) Describe components of health-related fitness in relation to one career goal.
- f) Explain the impact of physical activity on emotional and social well-being for the present and into the future.

Social Development

- 10.4 The student will demonstrate appropriate behaviors in all physical activity settings and the social skills needed to be a contributing member of society.
- a) Explain the importance of and demonstrate communication skills in physical activity settings.
 - b) Explain the importance of critical thinking and problem solving for current and future health and fitness.
 - c) Identify and avoid potentially dangerous situations in physical activity settings.
 - d) Explain the importance of understanding cultural diversity for personal health and fitness.
 - e) Evaluate opportunities for social interaction and social support in a self-selected physical activity or dance.
 - f) Apply stress-management strategies (e.g., mental imagery, relaxation techniques, deep breathing, aerobic exercise, meditation) to reduce stress.
 - g) Explain possible benefits of mind-body exercise/activities (e.g., yoga, Pilates, tai chi).
 - h) Explain the importance of conflict resolution for current and future health and fitness.

Energy Balance

- 10.5 The student will explain the importance of energy balance and evaluate current caloric intake and caloric expenditure to maintain optimal health and prevent chronic disease for the present and into adulthood.
- a) Analyze the relationships among physical activity, nutrition, body composition, and sleep that are optimal for personal health and/or for participation in lifetime activities.
 - b) Evaluate current activity and intensity levels.
 - c) Evaluate current and future caloric expenditure and intake needs.
 - d) Evaluate current and future sleep needs.
 - e) Evaluate the caloric intake needs for before, during, and after a variety of lifetime activities.
 - f) Explain energy balance (caloric expenditure vs. caloric intake) in relation to changing needs from adolescence through adulthood.
 - g) Explain the consequences of over-exercising.

Grade Eleven/Twelve (elective)

Elective physical education courses provide students with the opportunity to participate in physical activities for specific purposes. Students in elective physical education demonstrate the knowledge and understanding necessary to analyze movement performance in an activity of choice using scientific principles, and implement effective practice procedures for skillful performance in specialized movement forms. Students apply advanced movement-specific information so that they develop the ability to learn, self-assess, and improve movement skills independently. Options for offering specialized-movement courses can be configured by quarter, by semester, or on a full-year basis. Students should be offered the opportunity to self-select an activity throughout the course. Students will select areas of concentration to study. Examples of activity choices:

aerobics	lifelong activities	team sports
aquatics (swimming, kayaking, canoeing)	outdoor pursuits	weight management
cycling	Pilates	weight training/conditioning
dance	self-defense	
individual sports	skating	

Motor Skill Development

- 11/12.1 The student will study in-depth and demonstrate mastery of movement skills and patterns in at least one lifetime physical activity per nine-week period.
- Demonstrate mastery in all basic skills and movement patterns required for the selected activity and the ability to use the skills with consistency in the appropriate setting.
 - Identify and apply appropriate skill practice and strategies of the selected activity at an advanced level.
 - Demonstrate advanced movement patterns in self-selected movement or activity.
 - Demonstrate the ability to use combined movement skills and strategies in self-selected movement activities.
 - Analyze movement activities to identify component skills and movement patterns.
 - Conduct observations and skill analyses of others to improve skill performance.
 - Create practice and game plans for optimal performance of movement patterns in self-selected sport/activity from the perspective of a coach, personal trainer, athlete, or other sport-related role.
 - Select and apply appropriate practice procedures to learn skills and movement patterns in activities of personal interest.
 - Apply appropriate strategies during performance, to include offensive and defensive strategies, game-specific situational strategies, and strategies for working more effectively with team members/partners.
 - Compare and contrast strategies used in class performance of activities with college-level, pre-professional, or professional levels of activity.
 - Apply physiological and biomechanical principles to improve performance in sport/activity.

Anatomical Basis of Movement

- 11/12.2 The student will apply knowledge of body systems and movement principles, and concepts that aid in the improvement of movement skills and performance to specialized movement forms.
- Explain and apply biomechanical and physiological principles that aid in the improvement of skills and performance in specialized movement forms, to include laws of motion, leverage, balance, weight transfer, speed, timing, accuracy, force, cardiac output, maximal oxygen consumption (VO₂ max), energy systems (aerobic and anaerobic), heart rate (resting, target, and recovery), caloric cost of activity, muscle contraction, static versus dynamic flexibility, and muscular strength versus muscular endurance.

- b) Analyze performance to identify physiological and biomechanical deficiencies to include self-evaluation, peer evaluation, and teacher evaluation.
- c) Explain the rules, safety protocols, relevant markings/lines for the field of play, offensive and defensive tactics, and common penalties and violations for selected activities.
- d) Design, justify, and evaluate warm-up and cool-down sequences for selected activities.
- e) Apply the FITT (frequency, intensity, time, and type) principle to improve skill performance.
- f) Apply the specificity, overload, and progression (SOP) principle to the design and performance of a physical activity program to achieve physical benefits.
- g) Analyze movement activities to identify component skills and movement patterns.
- h) Analyze feedback about personal performance to improve skills including self-evaluation, peer evaluation, and teacher evaluation.

Fitness Planning

11/12.3 The student will design, implement, and evaluate a personal fitness program for self, a college student, or an employee in a selected field of work.

- a) Assess individual level of health-related fitness using a variety of appropriate measures (e.g., criterion-reference wellness tests, BMI, Fitnessgram®) and technology (heart-rate monitors, pedometers, accelerometers, and bioelectrical impedance).
- b) Evaluate and adjust activity levels to meet personal fitness goals.
- c) Design and critique a personal fitness program, using available technology (e.g., electronic portfolios, tracking applications) and resources, to improve or maintain personal fitness levels in relation to the five components of fitness.
- d) Explain the physical and mental (emotional, social) benefits of physical fitness for lifelong health and wellness.
- e) Create fitness plans for a variety of individuals based on needs and goals.
- f) Identify and evaluate community resources for selected physical and/or lifetime activities, to include recreation centers, local fitness centers, adult leagues, and other fitness clubs/groups.
- g) Identify barriers to physical activity, to include those related to time, motivation, or energy, skill confidence, fear of injury, resources, and social influences/peer pressure, and identify strategies to overcome these barriers.

Social Development

11/12.4 The student will evaluate and implement a safe environment for skill practice and play and demonstrate social competency skills for lifetime activity participation.

- a) Evaluate, create, and implement a plan for safe practice, to include responsible safety practices, rules and procedures, avoidance of dangerous situations, and strategies for decreasing risk of injury.
- b) Demonstrate appropriate etiquette as a participant and spectator in physical activity/sport.
- c) Demonstrate proper care of athletic/activity equipment.
- d) Demonstrate safe behavior when participating in or watching physical activity/sport.
- e) Explain and demonstrate leadership skills of problem solving, communication, and conflict resolution.
- f) Demonstrate the ability to work cooperatively to accomplish a group goal.
- g) Advocate for rule change or modification in a sport or activity to facilitate safety or inclusion of individuals from the point of view of an athlete, coach, parent, or referee.
- h) Demonstrate respect for differences among people in physical activity settings.
- i) Develop and demonstrate strategies for inclusion of persons of diverse backgrounds and abilities.

- j) Identify ways that physical activities can provide positive social interaction, such as the benefits of team involvement and an individual's role as a positive member of a group.
- k) Create and implement a strategy to promote peer involvement in physical activity, such as social-networking campaign, a video announcement, or physical activity Web presence.

Energy Balance

11/12.5 The student will explain the importance of energy balance and demonstrate understanding of the nutritional needs of the body to maintain optimal health and prevent chronic disease for a lifetime.

- a) Analyze the relationships among physical activity, nutrition, body composition, and sleep that are optimal for personal health and/or for participation in a self-selected physical activity.
- b) Analyze current and changing activity and exercise levels for high school and college students or for employees in a chosen field.
- c) Analyze current and future nutritional needs in relation to changes in growth/aging.
- d) Explain the benefits of nutrient-dense, low-sodium foods versus high-calorie, nutrition-poor, and high-sodium foods.
- e) Analyze current and future sleep needs for positively impacting academic and career success.
- f) Apply rate of perceived exertion and pacing to a conditioning plan that meets the needs of a self-selected physical activity.
- g) Explain energy balance in relation to changing lifestyle needs from adolescence to adulthood.
- h) Explain the relationship between caloric intake and caloric expenditure while at work and at rest.

Personal Fitness I/II (elective)

Personal Fitness is an elective physical education course that focuses on fitness, strength training, physical conditioning, and lifetime health concepts, activities and knowledge to promote health and wellness. This course is structured to develop individualized knowledge of weight training and physical conditioning for the beginning student and the advanced student. The course requires mastery of training principles and thorough understanding of fitness center safety rules prior to participation in weight room laboratory experiences. The course content is presented so that teachers may select strategies and instructional techniques designed to improve muscular strength and endurance, flexibility, and cardiorespiratory endurance. Students will gain the necessary information and skills to plan and implement a personal fitness and conditioning program that includes skill- and health-related fitness components to achieve and maintain a health-enhancing level of physical fitness for a lifetime. Various training models will be presented that allow flexibility of instruction among diverse student needs. Students will continue to implement and modify personal fitness and conditioning programs.

Motor Skill Development

PF.1 The student will demonstrate mastery of movement skills and patterns used to perform a variety of strength training, physical conditioning, and fitness-based activities.

- a) Demonstrate proficiency in personal fitness (strength training, physical conditioning, and fitness activities), through execution of appropriate basic and advanced skills, use of knowledge related to an activity to enhance performance, development of motor skills for a high level of participation, consistent and correct performance of skills, understanding motor cues and how to correct performance problems, displaying effort to learn and apply new skills, participating confidently with peers, applying skills to the development of a personal fitness program, possessing necessary physical fitness for vigorous participation, and correct selection of appropriate exercises based on personal goals and ability.
- b) Explain the importance of and demonstrate proficiency in a variety of activities that contribute to improvement of each component of health-related and skill-related fitness.
- c) Explain the relationship between health-related fitness activities and health problems, such as cardiovascular disease, obesity, and joint pain.
- d) Demonstrate a variety of activities that contribute to improvement of each component of skill-related fitness.
- e) Demonstrate correct techniques, form, and exercise procedures when performing strength training, physical conditioning, and fitness activities and exercises.
- f) Describe and demonstrate a variety of assessment activities that contribute to the development and improvement of health- and skill-related fitness components and personal fitness goals.
- g) Apply movement principles and concepts to skill performance of strength training, physical conditioning, and fitness activities.

Anatomical Basis of Movement

PF.2 The student will describe major body systems and explain the effects of physical activity on the systems.

- a) Describe the muscular system, including identification of the major muscles/muscle groups of the body and their function.
- b) Describe exercises/activities that increase the strength and flexibility of the muscular system.
- c) Describe the cardiovascular system, including identification of organs and their functions.
- d) Explain the effects of physical activity and training on the muscular and cardiovascular systems.

Fitness Planning

PF.3 The student will create a personal fitness and conditioning program for skill- and health-related components of fitness.

- a) Plan and describe a personal fitness and physical conditioning program that includes skill- and health-related fitness components to achieve and maintain a health-enhancing level of physical fitness for a lifetime.
- b) Design, monitor, assess, and modify a personal fitness and physical conditioning program.
- c) Apply principles of training for planning and modifying levels of physical activity in personal fitness and physical conditioning plans.
- d) Evaluate a variety of strength-training programs and design a personal strength training program.
- e) Analyze different activities and sports for their contributions to the development of specific health- and skill-related fitness components.
- f) Use technology to assess, improve, and maintain personal health- and skill-related fitness levels.
- g) Evaluate fitness and physical conditioning programs, products, and services to become an informed consumer.

Social Development

PF.4 The student will demonstrate social-competency skills in physical activity settings.

- a) Explain and demonstrate appropriate etiquette that exhibits respects for self and others within school and recreational fitness activity settings.
- b) Demonstrate safe practices, rules, and procedures in a physical activity setting.
- c) Explain the importance of inclusive and helpful behaviors in school and recreational fitness activity settings.

Energy Balance

PF.5 The student will explain energy balance in relation to health-enhancing nutritional and activity practices.

- a) Analyze nutrient needs and sound nutritional practices associated with physical activity and fitness.
- b) Analyze the consequences and risks associated with an inactive lifestyle.
- c) Analyze the benefits gained from participation in strength training, conditioning, and fitness programs.
- d) Explain the role of nutrition and fitness in relation to weight management.
- e) Evaluate the risks of performance-enhancing (ergogenic) supplements.

Fitness Instructor (elective)

The purpose of the Fitness Instructor elective course is to provide students with the knowledge, skills, and experience needed to become certified in personal training, strength and physical conditioning, group fitness, or in other health fitness specialty areas. Students will learn to develop individualized programs with goals that are based on a variety of factors that affect one's overall health, to include genetic and chronic health conditions, sports injuries, age and gender, level of fitness, and lifestyle factors. Students will gain knowledge and skills to help improve posture, movement, flexibility, balance, core function, cardiorespiratory fitness, and muscular endurance and strength. Students will learn a variety of business skills, to include effective communication, leadership skills, marketing strategies, consumer advocacy, résumé writing, and interviewing skills. Students will also earn a certification in CPR and AED.

Motor Skill Development

FI.1 The student will demonstrate mastery of the movement skills and patterns used to perform a variety of strength-training, conditioning, and fitness activities.

- a) Demonstrate correct movement skills and patterns for strength-training, physical conditioning, and fitness activities.
- b) Analyze movement activities for component skills and movement patterns.
- c) Describe and demonstrate activities specific to improving the skill-related components of fitness.
- d) Define and identify *activities of daily living* (ADL) as the tasks of everyday life.
- e) Apply movement skills and patterns to functional fitness activities that support ADL.
- f) Identify and describe advanced resistance-training techniques.
- g) Apply principles of exercise progression to improve fitness.
- h) Demonstrate correct and safe techniques and form when performing strength-training, physical conditioning, and fitness activities and exercises.
- i) Demonstrate proper use of fitness equipment, selectorized weight machines, and free weights.
- j) Demonstrate safety protocols and procedures for strength-training, physical conditioning, and fitness activities.
- k) Identify contraindications to advanced resistance-training techniques.
- l) Identify and describe factors that influence participation in physical activity and adherence to an exercise program.
- m) Explain principles that result in behavior change.
- n) Describe psychological factors that may influence a person's adherence to an exercise program.
- o) Identify and apply strategies to increase adherence in an exercise program.
- p) Explain the role of the personal trainer in promoting an individual's adherence to an exercise program.
- q) Identify and explain considerations for special populations.

Anatomical Basis of Movement

FI.2 The student will apply knowledge of anatomy and movement principles and concepts to skill performance in strength training, conditioning, and fitness activities.

- a) Identify the planes of movement and types of movement that occur in the frontal, sagittal, and transverse planes.
- b) Define common anatomical terms.
- a) Identify major bones of the skeletal system.
- c) Identify and describe types of joints, including hinge and multiaxial (ball and socket).
- d) Explain muscle structure and function, to include major muscles of the body, terms related to muscles, and muscle origins and insertions.
- e) Explain movements that result based on muscle origin and insertion.

- f) Explain how muscles contract, to include agonist and antagonist movements in relation to muscle contraction.
- g) Identify and explain curvatures of the spine.
- h) Perform and analyze postural evaluation of another individual.
- i) Perform and analyze movement evaluation for stability and mobility of the joints of another individual.
- j) Perform and analyze flexibility evaluation of another individual.
- k) Perform and analyze balance and core-strength evaluations of another individual.
- l) Identify contraindications to assessments of movement.
- m) Perform assessments to evaluate the health-related components of fitness.
- n) Perform assessments to evaluate the skill-related components of fitness.
- o) Identify contraindications to health-related and skill-related fitness assessments.
- p) Identify and explain different methods for determining body composition.
- q) Explain the benefits and challenges of different methods for determining body composition.
- r) Differentiate between recommendations for physical activity and training principles to meet goals for general health benefits, weight management, fitness improvements, and athletic performance enhancement.
- s) Explain the effects of acute and chronic exercise on aerobic and anaerobic energy systems.
- t) Explain the body's response to cardiorespiratory exercise.
- u) Explain the body's response to resistance training.
- v) Explain the body's response to warm-up and cool down.
- w) Explain blood-pressure response related to acute exercise, chronic exercise, and changes in posture.
- x) Explain reversibility or deconditioning and the effect on fitness and performance.
- y) Define common musculoskeletal injuries.
- z) Compare and contrast muscle fatigue and delayed onset muscle soreness (DOMS) with musculoskeletal injury/overuse.
- aa) Explain inflammatory response and the healing process.
- bb) Identify and describe upper-extremity injuries.
- cc) Identify and describe lower-extremity injuries.
- dd) Identify and explain exercise modifications appropriate when participant is injured.

Fitness Planning

- FL.3 The student will plan and describe a personalized fitness and conditioning program for others that includes skill-related and health-related fitness components to achieve and maintain a health-enhancing level of physical fitness for a lifetime.
- a) Identify components of health/medical history.
 - b) Identify limitations of health/medical history.
 - c) Identify signs and symptoms common for cardiovascular, metabolic, or pulmonary diseases.
 - d) Conduct health and exercise history with another individual.
 - e) Develop SMART fitness goals with another individual based on fitness assessments and personal desired outcomes.
 - f) Apply FITT principle to improve or maintain cardiovascular and musculoskeletal fitness in healthy adults, seniors, youth, adolescents, and pregnant women.
 - g) Develop functional programming for stability, mobility, and movement.
 - h) Develop a resistance-training program with appropriate progressions.
 - i) Develop a cardiorespiratory-training program with appropriate progressions.
 - j) Evaluate fitness programming for others to determine effectiveness.
 - k) Identify contraindications of cardiorespiratory exercise.
 - l) Define and explain exercises to improve range of motion, to include dynamic stretching, passive stretching, proprioceptive neuromuscular facilitation (PNF), and partner stretching.

- m) Identify contraindications of range of motion exercises.
- n) Describe different forms of mind-body exercise (e.g., yoga, Pilates, tai chi).
- o) Identify indications for use of mind-body exercise.
- p) Identify contraindications for mind-body exercise.

Social Development

- FI.4 The student will accept responsibility for taking a leadership role as well as demonstrate the ability to follow, in order to accomplish group goals.
- a) Define and explain cultural competence and its importance in developing rapport with another individual.
 - b) Demonstrate effective teaching techniques for working with individuals of different learning styles, motivation levels, and physical activity levels.
 - c) Explain learning styles and instructional strategies, to include visual, auditory, and kinesthetic.
 - d) Demonstrate effective and varied teaching techniques for a variety of exercises.
 - e) Demonstrate and explain how to respond in an emergency situation.
 - f) Identify signs of cardiac emergency.
 - g) Demonstrate CPR and AED procedures for adults and children.
 - h) Identify emergency situations requiring first aid.
 - i) Demonstrate first-aid techniques used in emergency situations.
 - j) Identify and describe universal precautions and personal protection used during CPR and first aid.

Energy Balance

- FI.5 The student will explain energy balance.
- a) Identify and explain dietary guidelines based on USDA recommendations.
 - b) Identify macronutrients used by the body for energy.
 - c) Identify the number of kilocalories found in macronutrients that provide energy.
 - d) Explain energy balance and relationship to weight gain, weight loss, or weight maintenance.
 - e) Explain lipid and lipoprotein profiles.
 - f) Explain the influences of nutrition and physical activity on lipid and lipoprotein profiles.
 - g) Explain the importance of hydration.
 - h) Explain how to maintain hydration in a physically active individual, including effective methods to rehydrate after exercise.
 - i) Identify and describe common supplements and ergogenic aids used by individuals in training programs.
 - j) Explain potential risks, benefits, and contraindications associated with use of supplements and ergogenic aids.
 - k) Explain the relationship between body composition and health.
 - l) Define terms related to body composition including *body mass index* (BMI), *lean body mass*, and *fat mass*.
 - m) Explain influences on body composition including diet, exercise, and behavior modification.
 - n) Identify and explain inappropriate weight loss methods.
 - o) Identify and explain eating disorders including anorexia nervosa and bulimia nervosa.
 - p) Explain the female athlete triad.

Professional Responsibilities

- FI.6 The student will identify and explain professional and legal responsibilities to manage a personal business and be employed as a personal fitness instructor.

- a) Identify and explain requirements to become a certified personal fitness instructor and maintain certification, to include certification requirements, requirements to maintain certification, and resources for professional development to increase knowledge and skill and maintain certification.
- b) Identify and explain the role, scope of practice, and code of ethics of a personal fitness instructor.
- c) Identify and describe professional responsibilities of a personal fitness instructor.
- d) Identify and describe necessary facility maintenance.
- e) Explain and describe appropriate inspection and care of equipment to maintain safety and maximize use.
- f) Identify and describe appropriate facility supervision to maintain safety of users.
- g) Identify and describe legal considerations of working as a personal fitness instructor.