

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 a 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 for 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 strength training, physical conditioning, and fitness-based activities.

- a) Demonstrate proficiency in personal fitness-related skills (strength training, physical conditioning, and fitness activities) through the 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, appropriate spotting techniques, 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 moderate to vigorous participation, and correct selection of appropriate exercises based on personal goals and ability.
- b) Explain the importance of and demonstrate proficiency in 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 activities that contribute to the 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 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.

Essential Understandings	Essential Knowledge and Skills
<p>Proficiency includes consistent, correct performance of all critical elements and safety practices for skills and activities. (PF.1.a)</p> <ul style="list-style-type: none"> • Strength training activity skills may include: <ul style="list-style-type: none"> ○ Free weight activities ○ Olympic lifts ○ Dumbbell/kettlebell activities ○ Manual resistance activities ○ Resistance band activities ○ Resistance machines • Physical conditioning and fitness activities may include: <ul style="list-style-type: none"> ○ Speed and agility activities ○ Endurance activities ○ Flexibility activities ○ Plyometric activities • Activities to apply knowledge of strength training, physical conditioning and fitness activities may be self-selected (i.e., individual, dual, team activities) 	<p>In order to meet these standards, it is expected that students will</p> <ul style="list-style-type: none"> • demonstrate proficiency in strength training, physical conditioning, and fitness activities (PF.1.a) <ul style="list-style-type: none"> ○ analysis and performance of basic and advanced skills in strength training, personal conditioning, and fitness activities, including component skills and movement patterns applicable to skill performance ○ performance of spotting techniques ○ for a selected activity, evaluate skill performance, correct performance problems, select appropriate exercises to improve performance ○ demonstrate confident participation with peers;

Essential Understandings	Essential Knowledge and Skills
<p>Health-related and skill-related fitness components provide information about and contribute to a person’s overall physical health. (PF.1.b)</p> <ul style="list-style-type: none"> • Health-related fitness components may include cardiorespiratory endurance, flexibility, muscular strength and endurance, and body composition. • Skill-related fitness components include <ul style="list-style-type: none"> ○ Agility: the ability to move with quick, easy grace; quick change of direction ○ Balance: stability produced by even distribution of weight; muscles tense to keep the body in a balanced position ○ Coordination: harmonious functioning of parts for effective results; it takes eye-hand coordination to strike an object ○ Power: physical might; the ability to act or produce an effect; kicking a ball for distance ○ Reaction time: the time required for a subject to initiate a prearranged response to a defined stimulus; time between hearing a whistle and starting to run or time between seeing a ball being thrown to a place out of reach and moving to catch it ○ Speed: the rate of motion; ability to move swiftly <p>According to the Centers for Disease Control and Prevention (CDC), physical activity is one of the best things people can do to improve their health. It is vital for healthy aging and can reduce the burden of chronic diseases and prevent early death. Active people generally live longer and are at less risk for serious health problems like heart disease, type 2 diabetes, obesity, and some cancers. For people with chronic diseases, physical activity can help manage these</p>	<ul style="list-style-type: none"> • explain the importance of and demonstrate proficiency in activities for each component of health-related and skill-related fitness (PF.1.b); • explain the relationship between health-related fitness activities and health problems (PF.1.c); • demonstrate activities that contribute to improvement of each component of skill-related fitness (PF.1.d); • demonstrate correct techniques, form, and exercise procedures when performing strength training, physical conditioning, and fitness activities and exercises (PF.1.e); • describe and demonstrate assessment activities that contribute to the development and improvement of health- and skill-related fitness components and personal fitness goals (PF.1.f); • apply movement principles and concepts to skill performance of strength training, physical conditioning, and fitness activities. (PF.1.g) <p>Additional resources: SHAPE America National Standards and Grade-</p>

Essential Understandings	Essential Knowledge and Skills
<p>conditions and complications. (PF.1.c)</p> <p>Improving each component of skill-related fitness may include (PF.1.d)</p> <ul style="list-style-type: none"> • Speed and agility activities • Endurance activities • Flexibility activities • Plyometric activities • Reaction time activities. <p>Proficiency includes consistent, correct performance of all critical elements and safety practices (including spotting techniques) for skills and activities. (PF.1.e)</p> <ul style="list-style-type: none"> • Strength training activity skills may include: <ul style="list-style-type: none"> ○ Free weight activities ○ Olympic lifts ○ Dumbbell/kettlebell activities ○ Manual resistance activities ○ Resistance band activities ○ Resistance machines • Physical conditioning and fitness activities may include: <ul style="list-style-type: none"> ○ Speed and agility activities ○ Endurance activities ○ Flexibility activities ○ Plyometric activities • Component skills and movement patterns may include: <ul style="list-style-type: none"> ○ Squat ○ Lunge 	<p>Level Outcomes</p> <p><u>OpenPhyzed</u></p> <p><u>Health Smart Virginia</u></p> <p><u>PE Central</u></p> <p><u>Dynamic PE ASAP</u></p> <p>CDC</p>

Essential Understandings	Essential Knowledge and Skills
<ul style="list-style-type: none"> ○ Push ○ Pull ○ Bend ○ Twist <p>Assessments for personal fitness and health- and skill-related fitness components should be criterion-referenced, medically supported assessments. (PF.1.f)</p> <ul style="list-style-type: none"> • Assessments may include <ul style="list-style-type: none"> ○ Cooper Institute (FitnessGram) ○ ACE Group Fitness Instructor Fitness Assessment Protocols ○ Mayo Clinic <p>Movement principles may include hinge, plank, push, pull, squat, lunge, and rotation. These movements—either alone or in combination—are the basis of all movement. Movement principles may also include balance, stability, force, and form. (PF.1.g)</p> <p>Movement concepts may include body awareness, spatial awareness, effort awareness, and relationship to/with objects, people and space or locomotor, non-manipulative, and manipulative skills. (PF.1.g)</p>	

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.

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<p>The muscular system is made up of cardiac (heartbeat), smooth (circulation, digestion, breathing), and skeletal (mobility, stability, posture) muscle. Smooth and cardiac muscles are involuntary, and skeletal muscles are voluntary (can consciously control) (“9 Functions of the Muscular System,” Healthline). There are 600 muscles in the body. Skeletal muscle major groups include (PF.2.a):</p> <ul style="list-style-type: none"> • Back: erector spinae, latissimus dorsi • Chest: pectoralis major, teres major, diaphragm • Arms and shoulders: biceps brachii, triceps brachii, trapezius, rhomboideus major and minor, pectoralis minor, pectoralis major, deltoid, rotator cuff muscles (subscapularis, supraspinatus, infraspinatus and teres minor) • Abdominals: rectus abdominis, external oblique, internal oblique, transversus abdominus • Legs: quadriceps (rectus femoris, vastus lateralis, vastus medialis, vastus intermedius), hamstrings (long head of the biceps femoris, short head of the biceps femoris, semitendinosus, and semimembranosus), gastrocnemius, tibialis anterior, soleus • Buttocks: gluteus maximus, medius, and minimus 	<p>In order to meet these standards, it is expected that students will</p> <ul style="list-style-type: none"> • identify the major muscles/muscle groups of the body and their function (PF.2.a); • describe exercises/activities that increase the strength and flexibility of the muscular system (PF.2.b); • identify the organs of the cardiovascular system and their functions (PF.2.c); • explain the effects of physical activity and training on the muscular and cardiovascular systems. (PF.2.d) <p>Additional resources: SHAPE America National Standards and Grade-Level Outcomes OPEN Online Physical Education Network Health Smart Virginia</p>

Essential Understandings	Essential Knowledge and Skills
<p>Exercises/activities that increase the strength and flexibility of the muscular system may include cycling, running, dance, push-ups, curl-ups, planks, squats, lunges, lifting weights, kettlebells, resistance bands, yoga, and Pilates. (PF.2.b)</p> <p>The cardiovascular system is sometimes called the blood-vascular, or the circulatory, system. It consists of the heart, which is a muscular pumping device, and a closed system of vessels called arteries, veins, and capillaries. Blood contained in the circulatory system is pumped by the heart around a closed circle or circuit of vessels as it passes again and again through the various “circulations” of the body. Blood carries oxygen and nutrients the organs need to work properly; and blood also carries carbon dioxide to the lungs so that it can be released out of the body through exhaling. (NIH National Heart, Lung, and Blood Institute) (PF.2.c)</p> <ul style="list-style-type: none"> • The heart is located in the center of the chest, near the lungs. It has four hollow heart chambers surrounded by muscle and other heart tissue. Four chambers include <ul style="list-style-type: none"> ○ Right and left atrium at the top ○ Right and left ventricle on the bottom that pump blood out of the heart • The chambers are separated by heart valves, which make sure that the blood keeps flowing in the right direction. Valves allow blood to flow out of a chamber and close to allow the chamber to refill with blood. Valves include: <ul style="list-style-type: none"> ○ Tricuspid valve, which separates right atrium and right ventricle. It acts like a door between the atrium and ventricle to prevent blood from flowing backward into the atrium. 	<p><u>PE Central</u></p> <p><u>Dynamic PE ASAP</u></p> <p><u>KidsHealth.org</u></p>

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<ul style="list-style-type: none"> ○ Pulmonary valve, which separates the right ventricle and pulmonary artery. The pulmonary artery carries blood to the lungs to drop off carbon dioxide and pick up oxygen. ○ Aortic valve, which separates the aorta from the left ventricle, where blood is carried to the lungs to drop off carbon dioxide and pick up oxygen. ○ Mitral valve, which separates the left atrium and left ventricle and acts like a door between the atrium and ventricle to prevent blood from flowing backward into the atrium. • Adding oxygen to blood <ul style="list-style-type: none"> ○ Oxygen-poor blood from the body enters the heart through two large veins called the superior vena cava and the inferior vena cava. The blood enters the heart’s right atrium and is pumped to the right ventricle, which pumps the blood to the lungs. ○ The pulmonary artery then carries the oxygen-poor blood from the heart to the lungs. The lungs add oxygen to the blood. The oxygen-rich blood returns to the heart through the pulmonary veins. ○ Oxygen-rich blood from the lungs then enters the left atrium and is pumped to the left ventricle. The left ventricle generates the high pressure needed to pump the blood to the whole body through blood vessels. ○ When blood leaves the heart to go to the rest of the body, it travels through a large artery called the aorta. • The heart is a muscle that needs blood to get oxygen and nutrients. Coronary arteries branch off from the aorta so that oxygen-rich blood is delivered to the heart as well as the rest of the body. 	

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<ul style="list-style-type: none"> • Interruptions, blockages, or diseases that affect how the heart or blood vessels pump blood can cause complications such as heart disease or stroke. <p>Physical activity and training affect the muscular system. (PF.2.d)</p> <ul style="list-style-type: none"> • Aerobic exercise mainly uses slow-twitch muscles, and the availability of oxygen prevents the buildup of lactic acid. This typically does not result in substantial muscle fatigue in the short term. • Anaerobic exercise mainly uses fast-twitch muscle fibers, and in the short term, muscle can become fatigued and sore because of impaired blood flow, ion imbalance within the muscle, nervous fatigue, loss of desire to continue exercising, and, most importantly, the accumulation of lactic acid in the muscle. Muscle soreness, once thought to be due to lactic acid accumulation, has more recently been attributed to small tearing of the muscle fibers caused by eccentric contraction. (https://courses.lumenlearning.com/fitness/chapter/effect-of-exercise-on-muscles/) • Long-term effects of physical activity on the muscular system includes building and strengthening muscles, which can protect the bones from injury, and supporting and protecting joints affected by arthritis. Strong muscles also give stability and improve balance and coordination. Exercise improves blood supply to the muscles and increases their capacity to use oxygen. <p>Effects of physical activity on the cardiovascular system (“Exercise and the Heart,” Johns Hopkins). (PF.2.d)</p>	

Essential Understandings	Essential Knowledge and Skills
<ul style="list-style-type: none"> • Improves muscles’ ability to pull oxygen out of the blood, reducing the need for the heart to pump more blood to the muscles • Reduces stress hormones that can put an extra burden on the heart • Works like a beta blocker to slow the heart rate and lower blood pressure • Increases high-density lipoprotein (HDL), or “good,” cholesterol and helps control triglycerides • Lowers blood pressure • Lessens risk of developing diabetes • Maintains healthy body weight • Reduces inflammation throughout the body. 	

Fitness Planning

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

- a) Design, monitor, assess, and modify 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) Apply principles of training (specificity, individualization, progressive overload and variation) for planning and modifying levels of physical activity in personal fitness and physical conditioning plans.
- c) Evaluate strength-training programs and design a personal strength-training program.
- d) Analyze different activities and sports for their contributions to the development of specific health- and skill-related fitness components.
- e) Use technology to assess, improve, and maintain personal health- and skill-related fitness levels.
- f) Evaluate fitness and physical conditioning programs, products, and services to become an informed consumer.
- g) Compare and evaluate competing arguments related to fitness products and services.

Essential Understandings	Essential Knowledge and Skills
<p>For skill- and health-related fitness components, see PF.1.b. (PF.3.a)</p> <p>Personal fitness/physical conditioning planning should include (PF.3.a)</p> <ul style="list-style-type: none"> • assessing and analyzing personal fitness levels • setting SMART goals for improvement and/or maintenance • creating strategies to achieve goals and monitor progress <ul style="list-style-type: none"> ○ applying FITT and SOP to plan • making timelines to achieve goals • creating a plan for reassessing, evaluating, and reflecting on progress of goals • revising plan strategies as needed. 	<p>In order to meet these standards, it is expected that students will</p> <ul style="list-style-type: none"> • plan (assess, set goals, action steps), implement, and monitor (modify as needed) a personal fitness and physical conditioning program that includes health- and skill-related components (PF.3.a); • apply principles of training for personal fitness and physical conditioning plans (PF.3.b); • evaluate strength-training programs (PF.3.c);

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<p>The principles of specificity, overload, and progression (SOP) are highly interconnected and are reciprocally dependent on one another. (PF.3.b)</p> <ul style="list-style-type: none"> • Specificity: Desired adaption occurs in response to specific stress placed upon the body; exercise/activity needs to match desired outcome. • Individualization: Training should be adjusted according to each individual’s characteristics and needs, such as age, gender, body composition, training age, injury history, what a person is training for, what goals does the person have. • Progressive overload: Stress must be applied beyond that which the body is accustomed to; gradually increase the weight, frequency, or number of repetitions in your strength training routine. • Progression: Once the body has adapted to a level of stress, additional stress is needed; progressively or gradually increase workload. • Variation: the manipulation of various training variables (i.e., adding variety or a different training stimulus); change an exercise (or use a derivative of an existing exercise); manipulate load and volume (reps, sets); ROM; and speed of movement <p>Evaluate strength-training programs and design a personal strength training program.</p> <ul style="list-style-type: none"> • Strength training programs may include (PF.3.c): <ul style="list-style-type: none"> ○ Free weight activities ○ Olympic lifts ○ Dumbbell/kettlebell activities ○ Manual resistance activities ○ Resistance band activities 	<ul style="list-style-type: none"> • design a personal strength training program (PF.3.c); • analyze how different activities/sports develop health- and skill-related fitness components (PF.3.d); • use technology to assess, improve, and maintain personal health- and skill-related fitness levels (PF.3.e); • evaluate fitness and physical conditioning programs, products, and services (PF.3.f); • research and evaluate claims and outcomes for fitness products and services. (PF.3.g) <p>Additional resources: SHAPE America National Standards and Grade-Level Outcomes KidsHealth.gov Health Smart Virginia MyPlate.gov OpenPhyzed Physical Activity Guidelines for Americans, 2nd ed. Healthy Children.org</p>

Essential Understandings	Essential Knowledge and Skills
<ul style="list-style-type: none"> ○ Resistance machines <p>Sport analysis example (tennis) (PF.3.d):</p> <ul style="list-style-type: none"> • Health-related fitness components <ul style="list-style-type: none"> ○ Cardiorespiratory endurance: continuous sprinting/movement throughout games, sets ○ Muscular strength and endurance: force needed for serves and strokes; strength/endurance for continuous sprinting/movement throughout games and sets, stability for continuous changing body positions ○ Flexibility: for the different strokes, change of direction, change of speed, reach, changing body positions ○ Body composition: overall demands of aerobic and anaerobic needs, continuous movements, changes in direction, changes in body position • Skill-related fitness components <ul style="list-style-type: none"> ○ Agility: moving quickly; quick changes of direction ○ Balance: stability for all body positions, for strokes and movements ○ Coordination: eye-hand coordination to strike an object; changing movements and body positions ○ Power: hitting a ball for speed, distance, placement; power needed by legs for quick movements ○ Reaction time: the time between seeing a ball being hit by an opponent and moving to a position to strike/return the ball ○ Speed: change of directions and movements <p>Technology may include: (PF.3.e)</p> <ul style="list-style-type: none"> • Heart rate monitors: Two types: wireless chest/arm straps that use an 	

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<p>electrical pulse to read heart rate (tend to be more accurate) and wrist-based/head phones trackers that use optical technology (light). Both can send continuous data to a monitor (watch/phone). Other heart rate monitors and technology may be available.</p> <ul style="list-style-type: none"> • Pedometers: track steps taken by indicating each time the wearer’s hips move; some models can track foot movement via a GPS tracker or built-in sensors on your phone. • Accelerometers: measure acceleration; able to capture intensity of physical activity; able to distinguish between walking and running; can separate human movement from mechanical vibration, such as riding in a car. • Bioelectrical impedance analysis: A person places hands on a device for about 20 seconds that runs a small current of electricity through the body to gauge body composition. • Variety of applications for devices to track/monitor for progress. <p>Programs, products, and services can be evaluated for the needs of an individual, intended outcomes, research-based results, medically appropriate (includes accommodations for a variety of needs, cost, time, ease of implementation, needed equipment), access to equipment/facilities, need for professional oversight or monitoring, and benefits and challenges. (PF.3.f)</p> <p>Fitness products and services should be researched using multiple valid and reliable resources (online, user reviews, professionals in the field) to analyze claims and outcomes. (PF.3.g)</p>	

Social and Emotional 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 that promote feelings of belonging, acceptance, and value.

Essential Understandings	Essential Knowledge and Skills
<p>Etiquette is defined as the rules indicating the proper and polite way to behave (e.g., shaking hands/giving high fives/congratulating the other team at the end of a game; wiping off equipment after use in a facility; taking turns with facility equipment; being mindful of others waiting to use equipment; appropriate clothing for activity/facility). (PF.4.a)</p> <p>Safe practices may include using appropriate safety equipment, proper skills needed for the activity and environment, weather-related concerns, proper equipment for the activity, access to guides for outdoor pursuits, specialized trainers, physical safety—use of sidewalks, traffic, bike lanes, free of debris and obstacles, lighting—and access to assistance if needed. Rules and procedures are dependent upon activities selected. (PF.4.b)</p> <p>Creating an inclusive culture for physical education/school and physical activity in the community helps every student learn to lead a healthy and active lifestyle and have a sense of belonging, acceptance and value (CDC).</p> <ul style="list-style-type: none"> • Strategies for inclusion may include modifying/adapting equipment, rules, 	<p>In order to meet these standards, it is expected that students will</p> <ul style="list-style-type: none"> • explain and demonstrate appropriate etiquette for school and recreational fitness activities (PF.4.a); • demonstrate safe practices, rules, and procedures (PF.4.b); • explain the importance of inclusive and helpful behaviors in school and recreational fitness activity settings that promote feelings of belonging, acceptance, and value. (PF.4.c) <p>Additional resources: <u>OPEN Online Physical Education Network</u> <u>Health Smart Virginia</u> <u>PE Central</u></p>

Essential Understandings	Essential Knowledge and Skills
environment, activity Creating a welcoming/inclusive environment, one that supports, uplifts, and promotes feelings of belonging, acceptance, and value. (PF.4.c)	EverFi KidsHealth.org

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.
- f) Explain the potential consequences of energy imbalance (e.g., over-exercising, under eating, over-eating, sedentary lifestyle).

Essential Understandings	Essential Knowledge and Skills
<p>Expenditure and intake needs vary with age and physical activity levels. Refer to Dietary Guidelines for Americans for adolescent and adult guidelines for caloric expenditure and intake. Also see DRI Calculator for Healthcare Professionals tool that calculates daily nutrient recommendations based on the Dietary Reference Intakes (DRIs) established by the Health and Medicine Division of the National Academies of Sciences, Engineering, and Medicine. The data represents the most current scientific knowledge on nutrient needs; however, individual requirements may be higher or lower than DRI recommendations. (PF.5.a)</p> <p>According to the CDC, physical activity is one of the best things people can do to improve their health. It is vital for healthy aging and can reduce the burden of chronic diseases and prevent early death. Active people generally live longer and</p>	<p>In order to meet these standards, it is expected that students will</p> <ul style="list-style-type: none"> • analyze nutrient needs and sound nutritional practices associated with physical activity and fitness (PF.5.a); • analyze the consequences and risks associated with an inactive lifestyle (PF.5.b); • analyze the benefits gained from participation in strength training, conditioning, and fitness programs (PF.5.c); • explain the role of nutrition and fitness in relation to weight management (PF.5.d);

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<p>are at less risk for serious health problems like heart disease, type 2 diabetes, obesity, and some cancers. For people with chronic diseases, physical activity can help manage these conditions and complications. Physical activity matters because (PF.5.b):</p> <ul style="list-style-type: none"> • 1 in 2 adults live with a chronic disease. • Only half of adults get the physical activity they need to help reduce and prevent chronic diseases. • Getting enough physical activity could prevent 1 in 10 premature deaths. • Over \$100 billion annually in healthcare costs are associated with inadequate physical activity. • Physical activity has positive physical, emotional, social, and mental wellness effects for children, adults, and healthy aging. • Work force effects: absenteeism and lost productivity from employee illness, injury, obesity or chronic conditions. One study reports that obesity alone has been estimated to cost employers almost \$2,500 per employee per year, including direct medical expenditures and absenteeism (Steps to Wellness– Physical Activity in the Workplace; CDC). • Building active, safe, and walkable communities may help increase retail activity and employment, increase property values, reduce healthcare costs, improve safety, and positively influence the workforce (fewer sick days). <p>For benefits gained from participation in strength training, conditioning, and fitness programs. See PF.2.d. (PF.5.c)</p> <p>According to the CDC (“Healthy Weight, Nutrition, and Physical Activity”), the key</p>	<ul style="list-style-type: none"> • evaluate the risks of performance-enhancing (ergogenic) supplements (PF.5.e); • explain potential consequences of energy imbalance including over-exercising, under eating, over-eating, and sedentary lifestyle. (PF.5.f) <p>Additional resources: SHAPE America National Standards and Grade-Level Outcomes OpenPhyzed Health Smart Virginia PE Central KidsHealth.gov MyPlate.gov Physical Activity Guidelines for Americans, 2nd ed. American Heart Association</p>

Essential Understandings	Essential Knowledge and Skills
<p>to achieving and maintaining a healthy weight isn't about short-term dietary changes. It's about a lifestyle that includes healthy eating, regular physical activity, and balancing calories consumed with the calories the body uses. When it comes to weight loss, there's no lack of fad diets promising fast results. But such diets limit nutritional intake, can be unhealthy, and tend to fail in the long run. Safe ways to help manage weight include getting optimal sleep, reducing stress, maintaining healthy eating habits (eating more fruits and vegetables), and regular physical activity. (PF.5.d)</p> <p>Appearance and performance enhancing drugs (APEDs) are most often used by to improve appearance by building muscle mass or to enhance athletic performance. Although they may directly and indirectly have effects on a user's mood, they do not produce a euphoric high, which makes APEDs distinct from other drugs, such as cocaine, heroin, and marijuana. However, users may develop a substance use disorder, defined as continued use despite adverse consequences. Anabolic-androgenic steroids, the best-studied class of APEDs, can boost a user's confidence and strength, leading users to overlook the severe, long-lasting, and in some cases, irreversible damage they can cause. They can lead to early heart attacks, strokes, liver tumors, kidney failure, and psychiatric problems. In addition, stopping use can cause depression, often leading to resumption of use. Because steroids are often injected, users who share needles or use nonsterile injecting techniques are also at risk for contracting dangerous infections such as viral hepatitis and HIV (NIDA). (PF.5.e)</p> <p>Energy imbalance results from consuming too many or too few calories for what is needed for daily activities. (PF.5.f)</p>	

Essential Understandings	Essential Knowledge and Skills
<ul style="list-style-type: none"> • Two important consequences of energy imbalance for adolescents are obesity (excessive energy intake and/or insufficient energy output) and undernutrition (insufficient intake of both calories and specific nutrients and/or excessive energy output). Note: Obesity can also be caused by genetic predisposition, family history of obesity, individual metabolism, and behavioral factors. • Over exercising can result in (Are you getting too much exercise?) <ul style="list-style-type: none"> ○ Being unable to perform at the same level ○ Needing longer periods of rest ○ Feeling tired ○ Being depressed ○ Having mood swings or irritability ○ Having trouble sleeping ○ Feeling sore muscles or heavy limbs ○ Getting overuse injuries ○ Losing motivation ○ Getting more colds ○ Losing weight ○ Feeling anxiety • Under eating: consuming fewer calories than their body needs to function correctly. This can have a severe effect on energy levels, causing feelings of physical tiredness and mental fatigue, which may impair a person’s daily functioning. (Nine signs and symptoms of under eating) • Overeating may (7 Harmful Effects of Overeating) <ul style="list-style-type: none"> ○ Promote excess body fat ○ Disrupt hunger regulation 	

Essential Understandings	Essential Knowledge and Skills
<ul style="list-style-type: none"> ○ Increase disease risk ○ Impair brain function ○ Cause nausea and indigestion ○ Cause excessive gas and bloating ○ Cause sleepiness (sluggish or tired) • A sedentary lifestyle can increase all causes of mortality, double the risk of cardiovascular diseases, diabetes, and obesity, and increase the risks of colon cancer, high blood pressure, osteoporosis, lipid disorders, depression and anxiety. (Physical inactivity a leading cause of disease and disability, warns WHO) 	