

# The **OPEN** Academic Language Project

Based on the Virginia Physical Education Standards of Learning

## Essential Strand Glossary

# GRADE TEN

THIS PROJECT IS MADE POSSIBLE THROUGH A PARTNERSHIP BETWEEN  
The Virginia Department of Education  
SUNY Cortland

The SUNY Cortland Activity and Movement Pedagogy Lab (AMP Lab)  
& OPEN (The Online Physical Education Network)

Please share. This is an open-source project.  
Kindly reference [OPENPhysEd.org](http://OPENPhysEd.org), The SUNY Cortland AMP Lab, and the VA DOE.



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Virginia Physical Education Standards of Learning Essential Strand Glossary

## MOTOR SKILL DEVELOPMENT

**Anatomy** (Noun) The branch of science concerned with the bodily structure of humans, animals, and other living organisms.

*(VA SOL 10.1) Billy wanted to learn more about anatomy so that he could understand how the body functions and performs.*

**Aquatics** (Noun) Sports, physical activities, and exercises done in or on water.

*(VA SOL 10.1) Alexa loves aquatics because she swims like a dolphin and spends a lot of time in a pool.*

**Biomechanics** (Noun) The study of the mechanical laws relating to the movement or structure of living organisms.

*(VA SOL 10.1) Blair filmed Josh running the 100m hurdles in order to analyze his biomechanics and compare his form with gold medalist Brianna Rollins.*

**Dance** (Noun) A series of movements that match the speed and rhythm of a piece of music.

*(VA SOL 10.1) Steven's favorite dance is the Salsa.*

**Exercise Physiology** (Noun) The study of the body's metabolic response to short-term and long-term physical activity.

*(VA SOL 10.1) Katie used what she learned in exercise physiology to determine how much energy she needed to run 5 miles.*

**Fitness Activities** (Noun) Activities that improve overall fitness such as walking, swimming, dancing, biking, jogging, or gardening activities.

*(VA SOL 10.1) Kim made sure that her exercise regimen involved a wide variety of fitness activities so her strength and endurance would be well-balanced.*

**Frontal** (Adjective) Relating to the vertical plane that divides the body into ventral and dorsal (belly and back) sections.

*(VA SOL 10.1) In anatomy and physiology, Donna could tell she was examining the frontal plane of human movement because she could see the model's face.*

**Individual Performance Activities** (Noun) Activities that do not require a teammate in order to compete or play such as golf, swimming, weight lifting, running/jogging, archery, etc.

*(VA SOL 10.1) Nick preferred to de-stress by participating in individual performance activities, like swimming and running, because he found it easiest to recharge when he was on his own.*

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**Lifetime Activities** (Noun) A sport or physical fitness activity in which a person can participate from childhood to old age.

*(VA SOL 10.1) Colleen decided to incorporate lifetime activities into her daily routine in order to stay fit for the rest of her life.*

**Outdoor Pursuits** (Noun) Physical activities that take place in natural or semi-natural settings outside, such as mountain biking, orienteering, canoeing, and rock climbing.

*(VA SOL 10.1) Mr. Blank has added outdoor pursuits to his curriculum for physical education because his students love to be in nature.*

**Rhythmic Activities** (Noun) A series of movements in which individuals can take part while any steady or prominent beat is present.

*(VA SOL 10.1) Mr. Johnson wanted his students to participate in rhythmic activities, so he introduced a DrumFit unit.*

**Sagittal** (Adjective) Relating to the anatomical plane that divides the body into left and right sides.

*(VA SOL 10.1) There are yoga poses that create perfect symmetry between both sides of the sagittal plane.*

**Skill Attainment** (Noun) Something, such as an accomplishment or achievement, that is attained, relating to a skill.

*(VA SOL 10.1) Because Ali was focused on skill attainment, he decided to ask his coach to evaluate his form and suggest ways to improve his performance.*

**Transverse** (Adjective) Relating to the imaginary plane that divides the body horizontally near the waist into superior and inferior parts.

*(VA SOL 10.1) In biomechanics, the students looked at the critical elements of throwing as related to the body above and below the transverse plane.*

## ANATOMICAL BASIS OF MOVEMENT

**Aerobic Activities** (Noun) Physical exercises of low to high intensity that increase the amount of oxygen used and delivered to the muscles for a sustained period of time.

*(VA SOL 10.2) Suzie participated in aerobic activities to improve her cardiovascular health.*

**Aerobic Respiration** (Noun) The energy pathway in which oxygen provides the chemical catalyst for the generation of energy. This system is associated with longer, more sustained forms of physical activity.

*(VA SOL 10.2) When Chandler was jogging in the Halloween 5K, his body was using aerobic respiration to fuel his run.*

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**Agonist** (Noun) A muscle whose contraction moves a part of the body directly; also known as a prime mover. Its contraction is regulated by a paired muscle known as an antagonist.

*(VA SOL 10.2) The agonist used in an arm curl is the biceps, while the triceps acts as the antagonist.*

**Anaerobic** (Adjective) Concerning the energy pathway in which energy is generated without the use of oxygen. In humans, glycolysis is the main anaerobic metabolic pathway.

*(VA SOL 10.2) When he was sprinting with the track team, Paul's body used the anaerobic energy system to supply quick energy to his muscles.*

**Anaerobic Respiration** (Noun) The energy pathway in which energy is generated without the use of oxygen. In humans, glycolysis is the main anaerobic metabolic pathway.

*(VA SOL 10.2) Glucose is a carbohydrate used as a fuel source during anaerobic respiration.*

**Analysis** (Noun) Detailed examination of the elements or structure of something, typically as a basis for discussion or interpretation.

*(VA SOL 10.2) Personal analysis of physical activity habits will help you create a comprehensive fitness plan.*

**Antagonist** (Noun) A muscle that opposes and regulates the actions of another muscle.

*(VA SOL 10.2) Linzy just learned that during an arm curl exercise, the triceps act as an antagonist to the biceps.*

**Blood pressure** (Noun) The pressure of the blood against the inner walls of the blood vessels, varying in different parts of the body during different phases of contraction of the heart and under different conditions of health, exertion, etc.

*(VA SOL 10.2) The class learned that coronary artery disease can cause high blood pressure because blood flow is impeded by a buildup of plaque and a hardening of the arteries.*

**Condition** (Verb) To train or exercise for a specific purpose.

*(VA SOL 10.2) Nolan worked to condition his core in order to improve his posture.*

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**Fast- and Slow-Twitch Muscle Fibers** (Noun) People have two general types of skeletal muscle fibers: slow-twitch (type I) and fast-twitch (type II). Slow-twitch muscles help enable feats of endurance such as distance running, while fast-twitch muscles fatigue faster but are used in powerful bursts of movements like sprinting.

*(VA SOL 10.2) Slow-twitch muscle fibers are most important during the majority of a 5k race, but at the end, your fast-twitch muscles help you sprint across the finish line.*

**Lactic Acid System** (Verb) An anaerobic energy system in which adenosine triphosphate (ATP) is manufactured from the breakdown of glucose to pyruvic acid in the muscle cells.

*(VA SOL 10.2) Dr. Curtis taught us that ATP-PC and the lactic acid system is part of anaerobic respiration.*

**Pacing** (Verb) To make a rate of movement constant in order to enable endurance, especially in stepping, walking, or running.

*(VA SOL 10.2) Bill was pacing himself to run a 5K, so he did not begin his race by sprinting.*

**Proficiency** (Noun) A high degree of skill; mastery or expertise.

*(VA SOL 10.2) Tyler's proficiency in basketball made him a very tough opponent for even the best players in class.*

**Rate of Perceived Exertion (RPE)** (Noun) A way of measuring physical activity intensity level; a measurement of how hard you feel that your body is working during physical activity/exercise.

*(VA SOL 10.2) Evan was moderately tired after his bike ride, so he rated the workout as a 7 out of 10 on the RPE scale.*

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## FITNESS PLANNING

**Exercise Adherence** (Noun) The extent to which a patient acts in accordance with an advised exercise regimen.

*(VA SOL 10.3) Becca learned that when a doctor prescribes it as part of a complete treatment plan, exercise adherence is just as important as regularly taking medicine.*

**Health-Enhancing** (Verb) Relating to behavior or activity that, when added to baseline behaviors, produces health benefits.

*(VA SOL 10.3) By the time the students graduated high school, they understood the importance of health-enhancing behaviors such as regular exercise and eating nutritious meals.*

**Health-Related Fitness** (Noun) Five physical fitness components that directly relate to good health which include: cardiovascular endurance, muscular strength, flexibility, muscular endurance and body composition.

*(VA SOL 10.3) Sheneeka did a pre-assessment of her health-related fitness components and concluded her muscular strength required improvement.*

**Participation** (Noun) The act of taking part in something.

*(VA SOL 10.3) Mrs. Drago asked her students to wear comfortable clothing to PE class in order to make participation in the activities easier.*

**Personal Fitness** (Noun) A continuum of infinite possibilities for better or worse physical or mental health.

*(VA SOL 10.3) Nico searched for gyms near his home so that he could work to improve his personal fitness whenever it was convenient.*

**Physical Activity** (Noun) Any bodily movement produced by skeletal muscles that requires energy expenditure.

*(VA SOL 10.3) Sixty minutes of physical activity should be performed each day in order to maintain good health.*

## SOCIAL DEVELOPMENT

**Aerobic Exercise** (Verb) Physical exercises of low to high intensity that increase the amount of oxygen used and delivered to the muscles for a sustained period of time.

*(VA SOL 10.4) Jenna's physical education teacher recommended she participate in more aerobic exercise to help keep her cardiorespiratory system healthy.*

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**Deep Breathing** (Noun) Breathing with long breaths, especially as exercise or a method of relaxation.

*(VA SOL 10.4) In yoga, the combination of deep breathing and intentional movement can bring balance to the body and mind.*

**Meditation** (Verb) To spend time in quiet thought for mental health or religious purposes.

*(VA SOL 10.4) Meditation is often practiced in conjunction with yoga in order to maximize the benefits they have on one's mental and physical health.*

**Mental Imagery** (Noun) A visual representation in the mind in the absence of environmental input.

*(VA SOL 10.4) Mental imagery can aid in the mastery of skill; for example, it can be helpful to picture the perfect baseball swing before attempting to hit the ball.*

**Mind-Body Exercise** (Noun) Physical exercise executed with a profoundly inwardly directed focus.

*(VA SOL 10.4) As a mind-body exercise, Pilates utilizes four main principles: Breathing, Precision, Control, and Concentration.*

**Personal Health** (Noun) The health of oneself.

*(VA SOL 10.4) One way Joey focuses on his personal health is by exercising every day.*

**Pilates** (Noun) A system of exercises using special apparatus, designed to improve physical strength, flexibility, and posture, and enhance mental awareness.

*(VA SOL 10.4) Rosemarie started following a Pilates workout video every day to increase her core strength, posture, and flexibility.*

**Relaxation Techniques** (Noun) The variety of methods and manipulations used to reduce stress, muscle tension, and anxiety in the body.

*(VA SOL 10.4) Monica participated in relaxation techniques to help her feel less nervous about her upcoming race.*

**Stress Management Strategy** (Noun) A strategy used to control a person's level of stress; usually for the purpose of improving the everyday ability to function.

*(VA SOL 10.4) Pheobe participated in stress management techniques to prepare herself for her final exams.*

**Tai Chi** (Noun) An ancient Chinese tradition that, today, is practiced as a graceful form of exercise. It involves a series of movements performed in a slow, focused manner and accompanied by deep breathing.

*(VA SOL 10.4) Nicole started practicing Tai Chi, which helped her learn new breathing methods while exercising.*

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**Yoga** (Noun) A type of activity including breath control, simple meditation, and movement through specific bodily postures; began as a Hindu spiritual and ascetic discipline, and has since spread to become widely practiced for health and relaxation.

*(VA SOL 10.4) Yoga is not only about achieving and holding impressive poses; it also includes breath work and mental endurance.*

## ENERGY BALANCE

**Body Composition** (Noun) The percentage of fat, muscle, bone, and water found in a human body.

*(VA SOL 10.5) Understanding body composition can help a person understand their overall health and personal fitness.*

**Caloric Expenditure** (Noun) The number of Calories burned by an individual in a given day or for a given task/function.

*(VA SOL 10.5) Aisha wanted to gain weight, so she made sure her daily caloric intake was more than her daily caloric expenditure.*

**Caloric Intake** (Noun) The number of Calories that a person consumes on a daily basis or in a specific meal.

*(VA SOL 10.5) Aisha wanted to gain weight, so she made sure her daily caloric intake was more than her daily caloric expenditure.*

**Chronic Disease** (Noun) A disease lasting 3 months or more.

*(VA SOL 10.5) Most chronic diseases cannot be cured by medication, but instead require lifestyle and behavior change.*

**Energy Balance** (Verb) The relation between intake of food and output of muscular or secretory work that is positive when the body stores extra food as fats and negative when the body draws on stored fat to provide energy for work.

*(VA SOL 10.5) Mandy wanted to assess her energy balance, so she started measuring her caloric intake and expenditure.*

**Nutrition** (Noun) The process of providing or obtaining the food necessary for health and growth.

*(VA SOL 10.5) Mr. Finn taught us that to be healthy, we need both good nutrition and physical activity.*

**Over-Exercising** (Verb) To push past bodily or mental exertion in a way that produces negative side effects.

*(VA SOL 10.5) When Beate started over-exercising, Mrs. Boland decided to initiate a conversation about healthy exercise limits.*