The **OPEN** Academic Language Project

Based on the Virginia Physical Education Standards of Learning

Academic Language Card Set

GRADE NINE

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)

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GRADE NINE Motor Skill Development



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AQUATICS

(Noun)

Sports, physical activities, and exercises done in or on water.

Alexa loves aquatics because she swims like a dolphin and spends a lot of time in a pool.







BALANCE

(Noun)

An even distribution of weight enabling someone or something to remain upright and steady.

Ashlee was able to maintain her balance as she safely crossed the log over the creek.







BIOMECHANICS

(Noun)

The study of the mechanical laws relating to the movement or structure of living organisms.

Blair filmed Josh running the 100m hurdles in order to analyze his biomechanics and compare his form with gold medalist Brianna Rollins.







COMPETENCY

(Noun)

The ability to do something successfully or efficiently.

Sarah demonstrated competency on the paddle board by standing and paddling through the designated course.







DESIGN

(Noun)

Purpose, planning, or intention that exists or is thought to exist behind an action, fact, or material object.

The design of a personal fitness plan should fit your individual wellness goals.







ENERGY

(Noun)

The strength and vitality required for sustained physical or mental activity that is produced by the essential nutrients.

Balanced nutrition, proper hydration, and sufficient sleep are crucial if you wish to have enough energy for exercise.







EVALUATE

(Verb)

To form an idea regarding the amount, number, or value of something; assess; to judge or determine the significance, worth, or quality of something.

The students used a rubric to evaluate and record their performance on the paddle board self-assessment.











To handle the ball while playing defense in a sport such as baseball, softball, or cricket.

During today's softball lesson, Deedi was fielding ground balls using proper form and good positioning.







FITNESS

(Noun)

The condition of being physically fit and healthy.

To truly maintain excellent fitness, one cannot focus on exercise alone: proper nutrition is also important.







FORCE

(Noun)

Strength or energy as an attribute of physical action or movement.

During volleyball practice, Allison applied a great deal of force in order to successfully serve the ball over the net.







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.

Sheneeka did a pre-assessment of her healthrelated fitness components and concluded her muscular strength required improvement.









IMPLEMENT

(Verb)

To put into effect according to or by means of a definite plan or procedure.

Jackson implemented his personal fitness plan into his daily schedule.









LEVER

(Noun)

A moderately rigid object or bone that may rotate about an axis by the application of force. i.e.: bone that can move around a joint by the muscles that are attached.

Without the many levers in our bodies, we would not be able to move or perform basic tasks.







LOCOMOTOR MOVEMENT

(Noun)

A motion used to travel through space, such as walking, running, hopping, jumping, leaping, galloping, skipping, and sliding.

The triple jump involves the locomotor movements of running, hopping, and jumping.









MANIPULATIVE SKILL

(Noun)

Any motor skill that involves using hands, feet, or another body part to move or manipulate an object.

Because Jeff has excellent manipulative skills, he excels in golf, basketball, tennis, and lacrosse.







MODIFY

(Verb)

To make partial or minor changes to something in order to achieve success.

Kira understood that her strength was still developing, so she chose to modify the exercise in order to perform it safely.









MOTION

(Noun)

The action or process of moving or being moved.

The crowd followed the motion of the soccer ball with their eyes after the player kicked it toward the goal.







MUSCLE CONTRACTION

(Noun)

The movement of tension-generated sites within muscle fibers in response to load or force; causes the muscle to tighten and shorten.

Christian watched the muscle contraction in his arm as he was lifting weights.









NON-LOCOMOTOR MOVEMENT

(Noun)

Motions of the body that do not cause the body to travel a distance through space, such as turning, twisting, swinging, shaking, bending, and stretching.

As Julia walked by Juan, she noticed that he was performing the non-locomotor movement of bending down and touching his toes.









OUTDOOR PURSUITS

(Noun)

Physical activities that take place in natural or seminatural settings outside, such as mountain biking, orienteering, canoeing, and rock climbing.

Mr. Blank has added outdoor pursuits to his curriculum for physical education because his students love to be in nature.









OVERLOAD

(Verb)

To place an excessive load or amount; to do more over time.

When Tyler decided to overload his bench press, he made sure Evan was there to spot him.







PHYSIOLOGY

(Noun)

The branch of biological science dealing with the functions and activities of living organisms and their parts.

Clark used his knowledge of physiology to analyze his movements and improve his long jump.









PROFICIENCY

(Noun)

A high degree of skill; mastery or expertise.

Tyler's proficiency in basketball made him a very tough opponent for even the best players in class.







PROGRESSION

(Noun)

A movement or development toward a destination or a more advanced state, especially gradually or in stages.

In the beginning, Steve could only throw a short distance, but he worked his way through different practice progressions to gain distance on his throw.







REFINEMENT

(Noun)

The improvement or clarification of something by the making of small changes.

Bill's refinements to his golf swing help him make improvements in his game.









RHYTHMIC ACTIVITIES

(Noun)

A series of movements in which individuals can take part while any steady or prominent beat is present.

Mr. Johnson wanted his students to participate in rhythmic activities, so he introduced a Drum Fit unit.







ROTATION

(Noun)

The action of turning around an axis or center.

Erika, a dominate softball pitcher, used rotation to perform a windmill pitch.







SPECIFICITY

(Noun)

The quality or condition of being specific; working on a specific body area.

Jonah needed to improve is balance and decided to include specificity aimed at strengthening his core muscles.









STRIKE

(Verb)

To come into forcible contact or collision with an object.

Jana's club was striking the golf ball perfectly because she had taken the time to practice her swing.







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Anatomical Basis of Movement



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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.

> When Chandler was jogging in the Halloween 5K, his body was using aerobic respiration to fuel his run.







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.

Glucose is a carbohydrate used as a fuel source during anaerobic respiration.









ANALYZE

(Verb)

To examine methodically and in detail the constitution and/or structure of something; especially information.

The students were asked to analyze their partners' dance performances to see what specific locomotor skills were used.









CONCENTRIC

(Adjective)

Muscle contraction that permits the muscle to shorten.

Erika realized that when she performed an arm curl, the contraction of her biceps were concentric.







COOL DOWN

(Noun)

A period or act of slowing physiological movement back to normal after a game, performance, or exercise session, involving gentle exercise or practice.

It is important to perform a cool down after strenuous exercise, such as running.







ECCENTRIC

(Adjective)

Characterized by the force working against an active muscle while it is lengthening under load.

Jim told Erika that as she brought the weight back down from a bicep curl, her muscles were experiencing an eccentric contraction.







EFFICIENT

(Adjective)

Achieving maximum productivity with minimum wasted effort or expense.

As Rosemarie became more efficient during her swimming practices, she began to improve more quickly.







EVALUATE

(Verb)

To form an idea regarding the amount, number, or value of something; assess; to judge or determine the significance, worth, or quality of something.

The students used a rubric to evaluate and record their performance on the paddle board self-assessment.









EXTENSION

(Noun)

The action associated with straightening a limb out of a bent position.

Ryan knew that he had to strengthen his legs if he wanted to improve his extensions in ballet class.







FITT PRINCIPLE

(Noun)

The inclusion of Frequency, Intensity, Time, and Type of exercise as four factors that lead to a successful fitness plan.

Coach Stasia told her athletes to use the FITT principle when setting goals in order to be sure they were including all the elements necessary for success.









FLEXION

(Noun)

The action of bending or the condition of being bent, especially the bending of a limb or joint.

Flexion of the knees is important when shooting a free throw.







FORCE

(Noun)

Strength or energy as an attribute of physical action or movement.

During volleyball practice, Allison applied a great deal of force in order to successfully serve the ball over the net.







FREQUENCY

(Noun)

The rate at which something occurs or is repeated over a particular period of time.

Jose wanted to implement the FITT principle in his workout routine and decided the frequency of his cardiovascular workout would encompass 3 days a week.









INTENSITY

(Noun)

The amount of power or energy used to complete a specific exercise.

Pedro increased the intensity of his workouts in order to achieve his fitness goals more quickly.







ISOMETRIC

(Adjective)

Of, relating to, or denoting muscular action in which the joint angle and muscle length do not change during contraction

As she held a perfect plank position, Zoie recognized the sensation of isometric contraction.







LEVER

(Noun)

A moderately rigid object or bone that may rotate about an axis by the application of force. i.e.: bone that can move around a joint by the muscles that are attached.

Without the many levers in our bodies, we would not be able to move or perform basic tasks.







METABOLIC RESPONSE

(Noun)

Any reaction by the body in response to a particular stimulus.

The metabolic response to jogging will include increased heart rate and quickening of the breath.









MOVEMENT SKILLS

(Noun)

Foundational movement patterns using various body parts that serve as the basis of physical literacy.

A person must develop strong basic movement skills before they can begin to master complex techniques regularly used in sport.









MUSCLE CONTRACTION

(Noun)

The movement of tension-generated sites within muscle fibers in response to load or force; causes the muscle to tighten and shorten.

Christian watched the muscle contraction in his arm as he was lifting weights.









PHYSIOLOGY

(Noun)

The branch of biological science dealing with the functions and activities of living organisms and their parts.

Clark used his knowledge of physiology to analyze his movements and improve his long jump.







PLANES OF MOVEMENT

(Noun)

A sectioned off view of the body that includes the frontal plane, the sagittal plane, and the transverse plane.

Kate was taking a test on the planes of movement and answered correctly that a flexion movement can be seen in the sagittal plane.









SCIENTIFIC PRINCIPLES

(Noun)

As it relates to health, physiological and biomechanical principles used to improve movement skills.

Lori and Deb brainstormed how they could use the scientific principles to make improvements to their weightlifting movements.









SHORT-TERM

(Adjective)

Occurring in or relating to a relatively short period of time.

Alliah created a short-term exercise plan to quickly enhance her muscular strength.









SPECIFICITY

(Noun)

The quality or condition of being specific; working on a specific body area.

Jonah needed to improve is balance and decided to include specificity aimed at strengthening his core muscles.









The duration of an event or period.

Marco aimed to increase the amount of time he could exercise without stopping.









(Noun)

The genre of exercise that is chosen for participation.

Malliky was having a hard time deciding what type of exercise he should do to increase his muscular endurance: running or cycling?







WARM-UP

(Noun)

A period or act of preparation for a game, performance, or exercise session, involving gentle exercise or practice.

Renee did a warm-up before she started her weight training so that she wouldn't pull any muscles.







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ACCELEROMETER

(Noun)

An instrument for measuring acceleration and/or movement caused by acceleration.

Many activity trackers use an accelerometer to accurately measure movement associated with physical activity.







ANALYSIS

(Noun)

Detailed examination of the elements or structure of something, typically as a basis for discussion or interpretation.

Personal analysis of physical activity habits will help you create a comprehensive fitness plan.







ASSESS

(Verb)

To evaluate or estimate the nature, ability, or quality of an object, task, concept, or procedure.

Enrique will assess his shooting form to help him better understand his current skill level and how to improve.









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.

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.









CARDIORESPIRATORY

(Adjective)

Relating to the action of both the heart and the lungs.

Moe wanted to increase his cardiorespiratory endurance, so he planned to participate in a variety of aerobic exercises.









CONCENTRIC

(Adjective)

Muscle contraction that permits the muscle to shorten.

Erika realized that when she performed an arm curl, the contraction of her biceps was concentric.







CORE

(Noun)

The muscles of the torso, especially the lower back and abdominal area, which assist in the maintenance of good posture, balance, etc.

If an athlete wishes to perform at their highest level of ability, it is crucial to have a strong core.







DESIGN

(Noun)

Purpose, planning, or intention that exists or is thought to exist behind an action, fact, or material object.

The design of a personal fitness plan should fit your individual wellness goals.







DYNAMIC

(Adjective)

Characterized by constant change, activity, or progress.

Nina worked on her dynamic balance by walking across a balance beam.







ECCENTRIC

(Adjective)

Characterized by the force working against an active muscle while it is lengthening under load.

Jim told Erika that as she brought the weight back down from a bicep curl, her muscles were experiencing an eccentric contraction.







EXERCISE

(Noun)

An activity requiring physical effort, carried out especially to sustain or improve health and fitness.

When combined with proper nutrition, sufficient hydration, and plenty of sleep, exercise will make the body stronger and healthier.









EXERCISE INTENSITY

(Noun)

The amount of exertion used when performing an exercise.

Kristen was careful not to push past her personal limit of exercise intensity in order to avoid injury.







FITNESS

(Noun)

The condition of being physically fit and healthy.

To truly maintain excellent fitness, one cannot focus on exercise alone: proper nutrition is also important.







FITNESS PROGRAM

(Noun)

A set of fitness activities designed to improve one's health and physical condition.

Josh created a fitness program for Alli specifically designed to help her improve her muscular strength.







FITT PRINCIPLE

(Noun)

The inclusion of Frequency, Intensity, Time, and Type of exercise as four factors that lead to a successful fitness plan.

Coach Stasia told her athletes to use the FITT principle when setting goals in order to be sure they were including all the elements necessary for success.









FREE WEIGHT

(Noun)

A weight used in weightlifting that is not attached to an apparatus.

Jakob used free weights instead of fitness machines because he had developed good form and was ready to take his workout routine to a higher level.







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.

Sheneeka did a pre-assessment of her healthrelated fitness components and concluded her muscular strength required improvement.









HEART RATE

(Noun)

The number of heartbeat contractions within one minute.

Kayla understood that it was important to perform exercises that would raise her heart rate if she wanted to improve her cardiovascular endurance.









HEART RATE MONITOR

(Noun)

A device that allows one to measure one's heart rate in real time and/or record the heart rate for later study.

Caity wore a heart rate monitor during physical education class to measure the impact the activity had on her heart rate.









IMPLEMENT

(Verb)

To put into effect according to or by means of a definite plan or procedure.

Jackson implemented his personal fitness plan into his daily schedule.







ISOKINETIC

(Adjective)

Of, relating to, or denoting muscular action with a constant rate of movement.

Isokinetic muscle contraction has constant speed, and isotonic muscle contraction has constant tension.









ISOMETRIC

(Adjective)

Of, relating to, or denoting muscular action in which the joint angle and muscle length do not change during contraction

As she held a perfect plank position, Zoie recognized the sensation of isometric contraction.









ISOTONIC

(Adjective)

Of, relating to, or denoting muscular action taking place with normal contraction.

Isokinetic muscle contraction has constant speed, and isotonic muscle contraction has constant tension.







MAINTENANCE

(Noun)

The process of maintaining or preserving someone or something, or the state of being maintained.

The maintenance of good physical health takes perseverance and dedication.







MUSCULAR STRENGTHENING

(Noun)

The process of increasing the amount of force a muscles can exert against a resistance.

One cannot increase the amount weight one can bench press without a focus on muscular strengthening.









MUSCULAR STRETCHING

(Noun)

The process of flexing muscles for flexibility or range of motion.

One cannot increase the flexibility of the muscles without a focus on muscular stretching.









OVERLOAD

(Verb)

To place an excessive load or amount; to do more over time.

When Tyler decided to overload his bench press, he made sure Evan was there to spot him.







PEDOMETER

(Noun)

An instrument used to estimate the distance traveled on foot by recording the number of steps taken.

Because Rae wants to be sure that she walks at least 10,000 steps per day, she wears a pedometer to track her progress.









PERSONAL FITNESS GOALS

(Noun)

An aim or desired result involved in enhancing one's fitness and health.

Sam was asked to write down his personal fitness goals as a homework assignment for physical education class.









PROGRESSION

(Noun)

A movement or development toward a destination or a more advanced state, especially gradually or in stages.

In the beginning, Steve could only throw a short distance, but he worked his way through different practice progressions to gain distance on his throw.









PROPRIOCEPTIVE NEUROMUSCULAR FACILITATION (PNF)

(Noun)

A form of stretching to improve active and passive range of motion that can enhance performance.

After Jackie's shoulder surgery, her physical therapist included proprioceptive neuromuscular facilitation (PNF) in her treatment in order to increase her range of motion.







RESISTANCE TRAINING

(Noun)

A type of exercise that uses external resistance to cause muscle contractions with the intent to strengthen and tone, build mass and improve endurance.

Leea implemented resistance training into her fitness plan in order to help her muscles become more toned.









RESTING HEART RATE

(Noun)

The number of times your heart beats per minute while at complete rest.

Mark calculated and recorded his resting heart rate right after he woke up in the morning so that he could better measure the effect the day's workouts had on his body.









SCIENTIFIC PRINCIPLES

(Noun)

As it relates to health, physiological and biomechanical principles used to improve movement skills.

Lori and Deb brainstormed how they could use the scientific principles to make improvements to their weightlifting movements.









SELF-ASSESS

(Verb)

To assess or evaluate one's own performance of a job or learning task, considered in relation to an objective standard.

Ms. MacDonald asked the class to self-assess their dancing ability and rate their own performance.









(Noun)

The entirety of a certain number of cycles or repetitions that you complete when performing a specific exercise.

Mr. Nealer directed his PE students to perform 3 sets of 10 reps on each machine.







SPECIFICITY

(Noun)

The quality or condition of being specific; working on a specific body area.

Jonah needed to improve is balance and decided to include specificity aimed at strengthening his core muscles.









STRATEGY

(Noun)

A plan of action or policy designed to achieve a major or overall aim.

Claire used numerous strategies to defeat her opponent during the soccer drill.







TARGET HEART RATE

(Noun)

The minimum number of heartbeats in a given amount of time in order to reach the level of exertion necessary for cardiovascular fitness, specific to a person's age, gender, and/or level of physical fitness.

Jenna learned how to find her target heart rate in physical education class, which helped her understand how to exercise more efficiently.







TRAIN

(Verb)

To undertake a course of exercise and diet in preparation for a specific physical event.

Erica had been training for a month to run her first 5K.







TRAINING ZONES

(Noun)

Numeric ranges within which an individual's heart rate should ideally fall, depending on the type of exercise the individual is performing.

In class we learned about different training zones and how to calculate each one, which will be helpful when we evaluate the efficiency of our workouts.









UPPER BODY

(Noun)

The part of the body above the waist.

Callie decided to focus on training her upper body this morning at the gym, so she did push-ups and biceps curls.







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ANXIETY

(Noun)

A feeling of worry, nervousness, or unease, typically about an imminent event or something with an uncertain outcome.

Jackie realized that taking a 15-minute walk helped to ease her feeling of anxiety caused by her upcoming final exams.







CONFLICT RESOLUTION

(Noun)

A way for two or more parties to find a peaceful solution to a disagreement among them.

Teams with plans for conflict resolution tend to perform better during competition if the situation becomes stressful.







DANCE

(Verb)

To move rhythmically to music, typically following a set sequence of steps.

Dancing is a great way to have fun and improve cardiovascular endurance at the same time.







HYDRATION

(Noun)

The level of water supplied to the body in order to restore or maintain a balance of fluids.

Joy took a quick hydration break during soccer practice to replenish her body.







MENTAL ALERTNESS

(Noun)

The state of being consciously aware of one's thoughts and surroundings.

Mental alertness is crucial during competition in order to assess the actions of both teams and respond accordingly.







POSITIVE TEAM / GROUP DYNAMICS

(Noun)

The set of helpful behaviors and interactions a group of individuals employ as they work together.

Jordan observed positive group dynamics within the team: when an issue arose, everyone was able to find a solution together and without arguing.









PROBLEM-SOLVING

(Adjective)

Relating to the process of finding solutions to difficult issues.

Jess used his problem-solving skills to successfully navigate all the obstacles in the project adventure unit.









PROPER ALIGNMENT

(Noun)

Arrangement in a straight line or the correct or appropriate relative positions.

Rory was successful during the handstand challenge because she was very good at maintaining proper alignment during her handstand.









PSYCHOLOGICAL BENEFITS

(Noun)

A positive effect on the mind, especially as a function of awareness, feeling, or motivation.

Sookie loves yoga because it has many psychological benefits.







SOCIAL SUPPORT

(Noun)

Various types of support that people receive from others; generally classified into emotional or instrumental support.

Luke felt very comfortable participating in the group discussion because he could feel that his classmates were giving him a good deal of social support.







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BODY COMPOSITION

(Noun)

The percentage of fat, muscle, bone, and water found in a human body.

Learning about body composition can help people understand their overall health and personal fitness.







BODY MASS INDEX (BMI)

(Noun)

Weight-to-height ratio, calculated by dividing one's weight in kilograms by the square of one's height in meters. It is commonly used to determine healthy body mass.

Mr. Malinowski had us compare our body mass index (BMI) scores with other measures of body composition.







CALORIC EXPENDITURE

(Noun)

The number of calories burned by an individual in a given day or for a given task/function.

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.

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.

Most chronic diseases cannot be cured by medication, but instead require lifestyle and behavior change.







ENERGY BALANCE

(Noun)

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.

Mandy wanted to assess her energy balance, so she started measuring her caloric intake and expenditure.







FAT

(Noun)

The major storage form of energy in the body. Also one of the three main nutrients used by the body for energy, found in meats, nuts, oils, fish, and some dairy products.

Not all fats are unhealthy: some good fats are crucial to our body's ability to function, such as the fat found in avocados.







OPTIMAL HEALTH

(Noun)

The state of complete physical, mental, and social well-being.

Mr. Stabler told us we can come closer to achieving optimal health by finding a balance between our physical, mental, and social wellbeing.









SODIUM

(Noun)

A mineral that helps maintain blood pressure, manages the amount of water in the cells, and keeps nerves operating; detrimental in excess.

Mr. Nagengast said we should avoid foods that are high in sodium because it can increase our blood pressure.







SUGAR

(Noun)

A type of carbohydrate that is found naturally in fruits, vegetables, and milk products; also added to many foods during processing.

In moderation, some sugars, like those found in fruits, are good for the body.





