The Language of Sprinting and Coaching the Sprints – Michael Reid
(High School Focused Vocabulary)

Acceleration – concerned with the change in velocity per unit of time.

Adaptation – persistent changes in structure of function particularity related to response to increments in training.

Anaerobic Glycolysis – (the lactic acid system) the incomplete breakdown of carbohydrate. The anaerobic reactions in this breakdown release energy for the manufacture of ATP as they produce lactic acid.

Annual plan – length of training period that usually includes 1 to 3 Macrocycles.

Athlete Inventory – every sprint coach should know this to create a specific "model" for an individual athlete…
Stride length at maximum velocity/peak velocity
Stride frequency at maximum velocity/peak velocity
Trochanter length (Leg)

ATP-PC – an anaerobic energy system in which ATP is manufactured when Phosphocreatine (PC) is broken down.

Biological age – The physical maturity of an athlete.

Biomechanics – The science concerned with the internal and external forces acting on the human body and the effects produced by these forces; mechanics as applied to human movement.

Bio motor abilities – The capacity to perform a range of activities such as strength, speed, coordination, and endurance. Are both genetically determined and influenced by training.

Chronological age – The age of the athlete.

Competition Specific Training – Training that involves complete rehearsal of the technical and metabolic demands of the competition.
Conversion – 1 meter = 3.28 ft.

Coordination – The harmonious functioning of a muscle or group of muscles towards the production of normal or a desired result.

Density – The number of training units per unit of time.

Displacement – concerned with the change in position of a body with respect to a particular starting point and a given direction.

Driving Phase – Begins as the supporting phase ends and ends as the foot leaves the ground: should be a very short time.

Dynamic strength – Producing force when limbs are moving at high velocities; as speed of contraction increases, the body's ability to produce force decreases. Trained with dynamic plyometric drills, also resistance training with light weight.

Elastic strength – Muscles, ligaments, and tendons producing spring-like action. Can be trained with plyometric drills.

Endurance – The capacity to perform work or maintain a degree of force or speed in the presence of fatigue.

Energy system – One of the metabolic systems involving a series of chemical reactions resulting in the formation of waste products and the manufacture of ATP.

Extension – A body movement that increases the angle between articulating bones.

Fast-Twitch Fibre – A muscle fibre characterized by fast contraction time, high anaerobic capacity and low aerobic capacity, all making the fiber suited for high power output activities.

Flexion – Bending movement that decreases the angle of the joint and brings two articulating bones closer together.

General Training – general exercises that usually doesn't contain specific elements of the technical or metabolic demands of the competition: foundation training.

Ground Reaction Force – A force which is exerted by the ground in response to the force a body exerts on it.

Hamstring muscles – three (3) muscles at the rear of the upper thigh that extends hip and flexes knee. Most important muscle for locomotion.

Hip Extension – Movement of the femur bone backwards of the pelvis. It involves concentric contractions of the hamstring muscles. It also involves the gluteus maximus when movement between the pelvis and femur approaches and goes beyond 15 degrees.

Hip Flexion – movement of the femur forward from the pelvis. It involves concentric contractions of the hip flexor, quadriceps and adductor muscles.

Intensity – The quality element of the effort or training: usually as a percentage of maximal effort.

Intramuscular coordination – the ability of coordinating many neuromuscular units to act simultaneously to perform a task within a muscle.

Lactate Acid – a fatiguing metabolite of the lactic acid system resulting from the incomplete breakdown of glucose (sugar).

Lactic Acid System – an anaerobic energy system in which ATP is manufactured when glucose is broken down to lactic acid. High intensity efforts requiring one to three minutes to perform draw energy (ATP) primarily from this system.

Law of overload – The principle stating that the nature of loading must challenge an athlete's present fitness status.

Law of Reversibility - the principle that states that when there is no training load, and consequently no need to adapt, the fitness level of the athlete will return to a level consistent with the demands of training: when training ceases, the training effect reverses at one third the rate of gain.

Law of Specificity – the principle that states that the training load must be specific to the individual athlete and the event for which the athlete is training.

Macrocycle – The largest division of the training year or season consisting of preparation, competition, and transition.

Main Competition Phase – A phase of training dedicated to the optimum achievement in competition.

Modeling – A training unit in which competition requirement is simulated.

Muscular endurance – the ability of the muscle or group of muscles to perform repeated contractions for a longer period of time.

Pedagogy – The art or style of teaching.

Periodization – The continuous cyclical structure of training to achieve optimal development of performance capacities.

Phosphocreatine – A chemical compound stored in the muscle which when broken down aides in manufacturing ATP.

Preparation phase – begins at the end of the recovery phase, front thigh moving to parallel with the ground and with the rapid acceleration of the thigh down and backwards.

Power – Performance of work performed expressed per unit of time.

Pre-competition – a phase of training in which one will see the phase vigorous development of a specific skill and fitness. The training in this phase begins to address event-specific objectives.

Progressive overload – The methodical increase in the training load about that which the athlete is accustomed.

Recovery – the physiological process taking place especially in the period following an acute bout of exercise when the body is restored to its pre-exercise condition. Recovery processes include replenishment of muscle glycogen and Phosphagen stores, removal of lactic acid and other metabolites, reoxygenation of the myoglobin and protein replacement.

Recovery phase – the phase in which the foot is off the ground and is being brought forward from behind the body to the front of the body in preparation for the next ground contact.

Skill – the ability to carry out a task with maximum certainty and minimum expenditure of energy and time.

Speed – refers to the motion of the body; distance covered in a unit of time, does not tell about direction.

Static Strength – producing forces when stable or moving at a slow rate of flexion and extension movements. Trained in the weight room.

Stride Frequency – the number of strides, or percentage of, that an athlete can complete per each 1 second interval.

Stride Length – The distance covered from toe off on one leg to toe touchdown of the opposite leg during sprinting.

Super Compensation – Returning to a level of fitness beyond that of the original, following the fatigue resulting from training.

Support phase – Begins when the foot lands, contacts the ground and ends when the athlete's center gravity passes forward of it: should be short in time.

Task Specificity - Performing, training, or identifying *SPECIFIC* details of a particular task. The key is to *SPECIFICALLY* identify possible deficits, THEN identify those exercises and training routines that directly affect stride length and stride frequency and address those individually and not in a general sense.

Trochanter Length – is measured from the top of the greater trochanter to the ground in bare feet. It should be measured in centimeters. Trochanter length is a necessary factor in the assessment of an athlete's stride length as is SPECIFICALLY pertains to them.

Training age – the number of years spent in specialized training for an event.

Training ratio – The ratio between training and recovery.

Training session – The combination of several training units of a complimentary nature (workout)

Training unit – The segment of a session that meets the objective of one training component/bio-motor element.

Vector – described by magnitude and direction (ex. Velocity, force)

Velocity – Concerned with the displacement per unit of time in a given direction; the rate at which an object changes its position in a given direction (vector).

Volume – the extent of training: the quality of work performed.