Unit 1 – Fitness for Sport and Exercise

Learning Aim A – Knowledge Organiser

Physical Components of Fitness	
Aerobic Endurance	The ability of the cardiorespiratory system to work efficiently, supplying nutrients and oxygen to working muscles during sustained physical activity.
Muscular Endurance	The ability of the muscular system to work efficiently, where a muscle can continue contracting over a period of time against a light to moderate fixed resistance load.
Muscular Strength	The maximum force (in kg or N) that can be generated by a muscle or muscle group.
Speed	Distance divided by the time taken, measured in metres per second (m/s). The faster an athlete runs over a given distance, the greater their speed.
Flexibility	Having an adequate range of motion in all joints of the body; the ability to move a joint fluidly through its complete range of movement.
Body Composition	The relative ratio of fat mass to fat-free mass (vital organs, muscle, bone) in the body.

Skill Components of Fitness	
Agility	The ability of a sports performer to quickly and precisely move or change direction without losing balance or time.
Balance	The ability to maintain centre of mass over a base of support, which can be dynamic when on the move or static when stationary.
Co-ordination	The smooth flow of movement needed to perform a motor task efficiently and accurately.
Power	The product of speed and strength expressed as the work done in a unit of time.
Reaction Time	The time taken for a sports performer to respond to a stimulus and the initiation of their response.

Principles of Training (*FITT*)	
Frequency (*F*)	The number of training sessions completed in a week.
Intensity (*I*)	How hard an individual will train.
Time (*T*)	How long an individual will train for.
Type (*T*)	The training method an individual will use to improve a specific component of fitness and/or their sports performance.

Additional Principles of Training	
Progressive Overload	Training needs to be demanding enough to cause the body to adapt, improving performance.
Adaptation	How the body reacts to training loads by increasing its ability to cope with those loads. Occurs during thee recovery period after the training session is completed.
Individual Differences	The programme should be designed to meet individual training goals and needs.
Reversibility	If training stops, or the intensity is not sufficient to cause adaptation, training effects are reversed.
Specificity	Training should be specific to the sport, activity or components of fitness an individual wishes to develop.
Rest and Recovery	Required so that the body can recover from the training and to allow adaptation to occur.
Variation	It is important to vary the training regime to avoid boredom and maintain enjoyment.

Rate of Perceived Exertion (RPE) & Heart Rate (HR)
HR max (*bpm*) = 220 – age (years)
Recommended training zone for cardiovascular health = 60 – 85% of HR max.
HR (*bpm*) = RPE x 10 ***or*** **RPE** = HR (*bpm*) / 10