

# BTEC Sport Unit 1: Fitness for Sport and Exercise – Components of Fitness and Principles of Training

## Physical-Related Fitness Components

**Aerobic Endurance:** The ability of the heart and lungs, to work for a long period of time. Sports: Long distance running, Football, Road Cycling.



**Muscular Endurance:** the ability of a muscle, to work continuously without tiring. Sports: Hockey, Rugby, Endurance Sports



**Flexibility:** The range of movement at a joint. Sports: Gymnastics, Dance, Diving.

**Muscular Strength:** The maximum amount of force a muscle can produce in a short period of time. Sports: Rugby, Powerlifting, Boxing.



**Speed:** The ability to cover distances quickly. 3 types of speed; Accelerative Speed, Pure Speed & Speed Endurance. Sports; Athletics, Football, Rugby.

**Body Composition:** The ratio of Fat to fat-free mass In the body. Different sports will need a different body fat percentage

## Skill Related Fitness Components

**Agility:** Ability to change direction quickly and efficiently. Sports: Tennis, Rugby.

**Balance:** Ability to maintain centre of mass over a base of support. Two types; Static and Dynamic Balance. Sports; Gymnastics, games sports.

**Co-Ordination:** Smooth flow of movement to be able to perform a motor skill fluently. Sports; Tennis, Rugby, Gymnastics.

**Power:** Combination of Speed and Strength. Sports; Long Jump, Rugby, American Football.

**Reaction Time:** The ability to react quickly to a stimulus. Sports; Sprinting, Tennis, Table tennis.



## Principles of Training

For any training to be successful, it must stick to the following principles;

**Specificity:** Tailoring training to your goals and sport.

**Progressive Overload:** Gradually increasing exercise intensity to cause adaptation.

**Variation:** Changing the type of training, to increase motivation.

**Adaptation:** Changes in the body caused by exercising at a high intensity.

**Reversibility:** When you stop training, you lose any fitness adaptations you will have gained.

**Rest & Recovery:** The time required to allow your body to repair any damage sustained during training/competition. The body will repair itself and become stronger than before.

**Frequency:** How often you train

**Intensity:** How hard you train

**Time:** How long you train for

**Type:** what type of training do you do



## Exercise Intensity

Measure how hard you are training by using your heart rate (BPM).

Maximum heart rate = 220 – age  
Target heart rate zone for Aerobic training 60-85% of your maximum heart rate.

Therefore, you should be training hard enough, that your heart rate is between 60-85% of your maximum heart rate. This will cause your body to adapt.

Borg's RPE scale can also predict intensity and heart rate.

RPE X 10 = HR



