Fitness Components

Strength = The maximum force that can be generated by a muscle or muscle group.

Muscular Endurance = The ability of muscles to continually contract over a period of time against a light to moderate resistance load.

Power = The product of strength and speed.

WARM-UP

1. Pulse Raising Activity

- Pulse raising activities gently raises the heart rate.
- E.g. Jogging, cycling, skipping.

2. Stretches

- Stretches should be dynamic (moving, not held). They prepare the muscles.
- E.g. High knees to stretch the hamstrings, heel flicks to stretch the quadriceps.

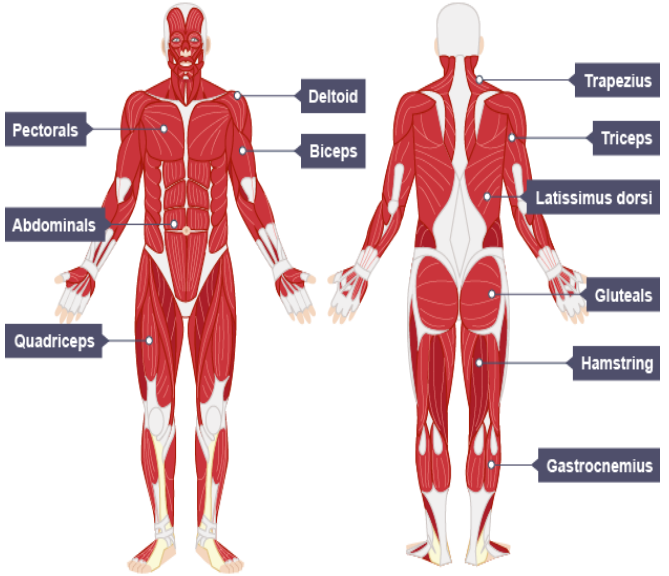
3. Skill-Based Activity

- This is the final part of the warm-up.
- This is where you familiarise yourself with the skills and actions that will be needed in the session.
- E.g. Passing the ball in rugby.

Muscular system

Arms-Biceps and Triceps

Legs- Quadriceps and Hamstrings



Year 7
Term 1: Health
Knowledge Organiser

Sedentary lifestyle

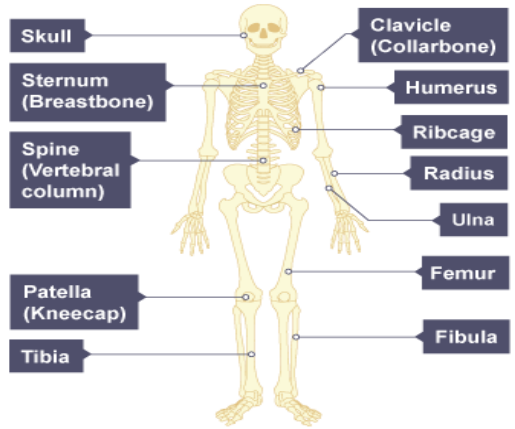
A sedentary lifestyle is one with no or irregular physical activity and an excessive amount of daily sitting.

Consequences of a Sedentary lifestyle-obesity, Depression, Type 2 diabetes, Poor muscle tone, osteoporosis.

Skeletal System

Arms-Humerus, ulna and radius

Legs-Femur, Patella, Tibia and Fibula



Short term effects of exercise

on HR and breathing rate =increase

Long term effect of exercise =decrease

Key Vocabulary: Pulse raiser Sedentary. Triceps Biceps Humerus Radius. Ulna Femur Patella Tibia Fibula

Year 7
Term 2: Health
Knowledge Organiser

USER GROUPS in Sport/Fitness

- Young children
- Teenagers
- People with disabilities
- Parents (singles or couples)
- People who work
- Unemployed/economically disadvantaged people
- Gender
- People from different ethnic groups
- Retired people/people over 60
- Families with children
- Carers
- People with family commitments

WATER SAFETY

1.Floating: The ability to float on your back helps conserve energy and breathe more easily while waiting for rescue.
2.Treading Water: This skill involves moving your arms and legs to keep your head above water, allowing you to stay in one place without sinking.
3.Swimming for Distance: Knowing how to swim at least 25 meters can help you reach safety or a shore if needed.
4.Controlled Breathing: Practicing proper breath control allows you to stay calm, conserve energy, and avoid panic in emergency situations.

TRAINING METHODS:

1.Circuit Training: A form of exercise where participants cycle through a series of exercises, targeting different muscle groups, with minimal rest between each station.
2.Continuous Training: Involves sustained, steady-state activity, like running or cycling, for an extended period without rest, designed to build cardiovascular endurance.
3.Weight Training: A form of strength training using weights (dumbbells, barbells, or machines) to build muscle strength and endurance.
4.Fartlek Training: A type of running workout that blends continuous and interval training by varying pace and intensity over different terrains or set times.
5.Interval Training: Alternates between periods of high-intensity effort and low-intensity recovery, improving speed and cardiovascular fitness.
6.Plyometric Training: Focuses on explosive movements, like jumps or bounds, to increase power and strength in muscles, particularly useful for athletes.

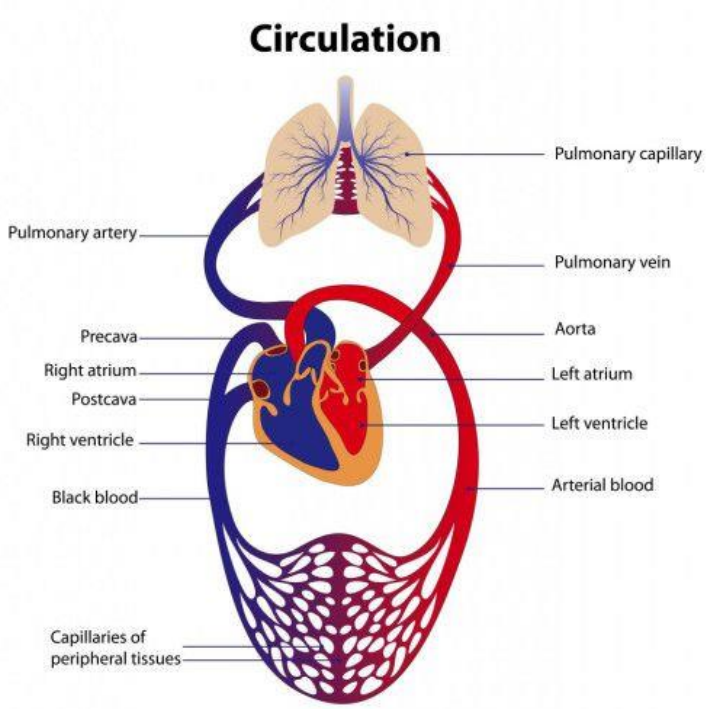
CARDIOVASCULAR SYSTEM

Veins

- Veins are blood vessels that return deoxygenated blood from various parts of the body back to the heart, where it can be reoxygenated.

Arteries

- Arteries are blood vessels that carry oxygen-rich blood away from the heart to tissues and organs throughout the body, ensuring they receive the oxygen and nutrients needed for proper function.



Key Vocabulary: Veins Arteries Circuit Plyometric Interval Continuous Weight Fartlek Water Safety User Groups

USER GROUPS in Sport/Fitness

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NUTRITION:
A balanced diet consists of six essential nutrients:
1.Carbohydrates – The body's main energy source, found in foods like grains, fruits, and vegetables.
2.Proteins – Essential for growth, repair, and muscle maintenance, sourced from meat, beans, and dairy.
3.Fats – Provide long-term energy and support cell function, found in nuts, oils, and fatty fish.
4.Vitamins – Support immune function, metabolism, and overall health, present in fruits, vegetables, and dairy.
5.Minerals – Aid in bone strength, nerve function, and hydration, including calcium, iron, and potassium from leafy greens, dairy, and meat.
6.Water – Essential for hydration, digestion, and temperature regulation, making up a large portion of the body.

NUTRITION:
- Carbohydrates are essential in sporting activity because they provide a quick and efficient source of energy, fueling muscles and sustaining performance during exercise.
- Hydration is crucial as it regulates body temperature, maintains electrolyte balance, and prevents dehydration, which can impair endurance, strength, and overall athletic performance

TRAINING PRINCIPLES:
Training thresholds refer to intensity levels that determine the effectiveness of an exercise program. There are two key thresholds:

1.Aerobic Threshold (50-70% of maximum heart rate) – The point where the body starts using oxygen efficiently for sustained activity, improving endurance.
2.Anaerobic Threshold (80-90% of maximum heart rate) – The intensity at which lactic acid accumulates faster than it can be cleared, enhancing high-intensity performance and muscle strength.

KARVONEN PRINCIPLE
The **Karvonen Principle** calculates target heart rate for optimal training intensity using the **Heart Rate Reserve (HRR)** method:

•**HRR** = Maximum Heart Rate (220 - age) - Resting Heart Rate
•**Intensity %** = Desired effort level (e.g., 60-85% for aerobic training)
•**Resting Heart Rate (RHR)** = Measured at rest, indicating baseline fitness
This formula personalizes training zones, ensuring workouts are effective and aligned with fitness goals.

Year 7
Term 3: Health
Knowledge Organiser

Age-predicted maximum heart rate (APMHR)

HRmax = 220 - age

Karvonen formula

% HRR = ([HRmax – RHR] x % intensity) + RHR

ANAEROBIC VS AEROBIC EXERCISE

- Aerobic exercise, like jogging or cycling, uses oxygen to produce energy, primarily generating carbon dioxide and water as byproducts.
- Anaerobic exercise, like sprinting or weightlifting, occurs without oxygen, producing lactic acid as a byproduct.