

# PHYSICAL EDUCATION CONCEPTS AND PRINCIPLES

Warm-up – a brief period of mild exercise to prepare for more rigorous activity. (2-5 min.)

Cool Down – a brief period of slower or less vigorous exercise/stretching following strenuous activity.

Aerobic - with oxygen – using large muscles for extended periods of time, rhythmical 20-60 min.

Anaerobic – short bursts of vigorous exercise – body fatigues quickly (ie. = sprints – can't continue)

## HEALTH RELATED FITNESS COMPONENTS:

### **1. Cardio-Respiratory Endurance**

- ability to exercise the entire body for long periods of time.
- ability of the heart and blood vessels to deliver blood and oxygen to working muscles and to remove waste products.

### **2. Muscular Strength**

- The amount of force you can put forth with your muscles – how much you can lift.  
Isometric, isotonic, isokinetic

### **3. Muscular Endurance**

- Ability to use the muscles many times.

### **4. Flexibility**

- Ability to use your joints fully (range of motion).

### **5. Body Fitness**

- The percentage of body weight that is fat compared to other body tissue (bone, muscle, etc)

## SKILL RELATED COMPONENTS:

Balance – Agility - Coordination – Power – Speed - Reaction time

PRINCIPLES OF TRAINING: To improve in a training program, you must consider:

- 1. Specificity** – a specific kind of fitness requires a specific kind of exercise. (Ex. Sprints/long distance)
- 2. Overload** – you need to place increased demands on the body to perform greater amounts of workload during exercise. Increase the number of repetitions/weight/distance to gain more strength or endurance.
- 3. Progression** – as the body adapts to a given workload, if further improvement is to occur, you must overload beyond your new capacity. Don't do too much too soon – improve with progression safely.

FIT TRAINING ZONE: your optimal level of workload for improving fitness (training or target zone)

**F – FREQUENCY** – how often you perform a specific exercise (3- 5 days a week)

**I - INTENSITY** – how hard you exercise (Work in THR zone/ high weight/ high repetitions)

**T – TIME** – how long you exercise (30-60 minutes of aerobic exercise is recommended 3-5 times a wk)

## TRAINING RESULTS:

- Resting heart rate becomes lower
- Training heart rate is harder to attain (THR  $220 - \text{age} = \text{MHR}$  multiply by .65 and .85 for THR zone. A 16 years old = 132-173 beats per minute.
- Recovery heart rate is faster