

Fitness Components

Skill Related: **ABCPR**

Agility – Change direction quickly

Balance – Centre mass over base:

- Static = staying still
- Dynamic = moving

Coordination – smooth flow

Power – strength and speed

Reaction time – respond to a stimulus

Learning Aim A

Physical Related: **MAMS Fat Body**

Muscular Endurance – muscles continue contracting over a period of time.

Aerobic Endurance – cardiovascular system works efficiently.

Muscular Strength – max force (N)

Speed – distance travelled / time taken:

- Pure Speed = upto 60m
- Accelerative Speed = upto 30m
- Speed Endurance = Sprints with a short recovery between each one

Flexibility – range of motion in all joints

Body composition – fat mass to fat free mass (vital organs, muscle and bones)

Intensity

Max Heart Rate: $220 - \text{age} = \text{Bpm}$

60 – 85% - Cardiovascular health and fitness training zone

Example: Sue is 20 years old. $220 - 20 = 200\text{bpm}$

$200 \times 60 / 100 = \mathbf{120\text{ bpm}}$

$200 \times 85 / 100 = \mathbf{170\text{ bpm}}$

(Must round up/ down & use Bpm Unit)

BORG Scale (6 to 20) another way to measure intensity

RPE – Rating of Perceived Exertion

RPE x 10 = predicated Heart Rate

Additional Principles of Training

S = Specificity – training is specific to the sport

P O = Progressive Overload – making training harder and harder

R = Rest & Recovery – allows adaptation to happen

I = Individual Needs – designed to athletes goals/ needs

V = Variation – using different methods to reduce boredom

A = Adaptation – how the body adapts to the training (stronger/ fitter)

R = Reversibility – if you stop training you lose your fitness

Basic Principles of Training

F = Frequency – how often (3 times a wk)

I = Intensity = how hard (70%)

T = Time – how long (50 mins)

T = Type – Training method (Interval)

Flexibility Training

Static Active – on your own
Static Passive – use a partner/ object
Ballistic – fast jerky movement, muscle strains
PNF – used in rehabilitation.
(Stretch – hold – relax – stretch further)

Learning Aim B

Safety

Warm Up – muscles, reduce injury
Cool Down – lactic acid, soreness, stretch
Technique – intensity/ injury
Use of equipment – lead to injury
Use of F.I.T.T. – consider when training

Aerobic Endurance Training

Continuous Training – moderate intensity, 30 mins, and no rest.
Fartlek Training – varied speeds and intensity. (Cannock Chase)
Interval Training – exercising followed by a rest/ recovery period.
Circuit Training – dif aerobic stations, 45 seconds work, 15 seconds rest.

Speed Training

Hollow Sprints – series of sprints separated by a 'hollow' period
Acceleration Sprints – standing/ walking to striding to max speed.
Interval Training - exercising followed by a rest/ recovery period

Strength, musc endurance and power

Circuit Training – dif stations, not to use the same muscle group in a row = avoid muscle fatigue.

Plyometrics – lengthening/ shortening muscles. *Movements* – lunging, bounding, hopping or jumping. * Can cause muscle injury *

Free Weights – order of exercises – 1) Core (Abdominals) 2) Sport specific muscles.
Maximum strength training – low reps and high loads.
Strength endurance training – high reps and low loads.

Units of Measurements

Multi Stage Fitness Test	ml/kg/min
Forestry Step Test	ml/kg/min
BMI	Kg/m ²
Hand Grip Dynamometer	KgW

Learning Aim C

Validity

'Does the test actually test for the component of fitness that I need to measure?'

Examples:

Sit & Reach – lower back and hamstring **only**

Hand Grip – lower arm and hand only

Vertical Jump – Legs only

Pre test procedures

Informed consent form – what the test involves

Calibration of equipment – equipment checked before use.

Skinfold Caliper Test Sites

Male = chest, abdominals, thigh

Females = triceps, suprailiac, thigh

Body Mass Index (BMI)

$\text{Weight (Kg)} / (\text{Height (m)} \times \text{Height (m)})$

Reliability

'If the test is repeated, do I get the same results?'

Examples:

Sit & Reach – similar warm up

MSFT – running service, climate, wind speed

Illinois Agility Run – footwear and surface

BIA Test

Electrodes on: Right hand and right foot

Well hydrated, no alcohol 48 hours before, no exercise 12 hours before.

Do **NOT** have to remove clothing.