



CHAPTER 1: FITNESS AND TRAINING DEMANDS

- 1.1 Health-related and performance-related fitness
- 1.2 Applying the components of fitness
- 1.3 Fitness testing for physical activity
- 1.4 The principles of training
- 1.5 Fitness training methods
- 1.6 Approaches to training
- 1.7 Periodisation of training programmes



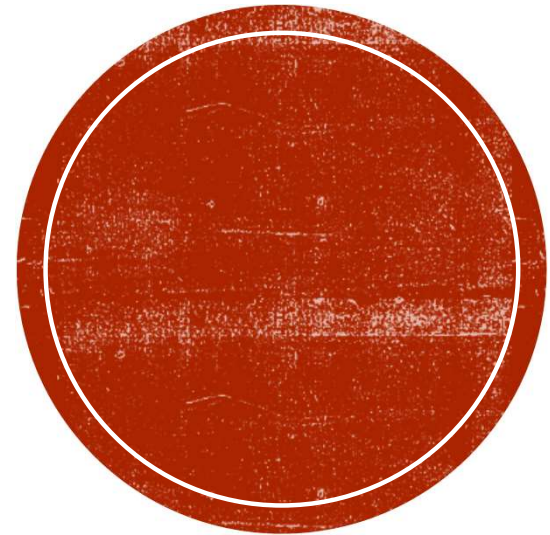
Learning intentions

In this chapter you will learn about the physical demands of performance. Upon completion you should be able to:

- ✓ Discuss the difference between health-related and performance-related fitness.
- ✓ Define the components of fitness and examine their effect on performance.
- ✓ Select appropriate fitness tests to evaluate health-related and performance-related fitness.
- ✓ Evaluate and apply the principles of training.
- ✓ Compare the different methods of training.



1.1 HEALTH- RELATED AND PERFORMANCE- RELATED FITNESS



TASK 1.1 (a)



Make a list of your daily demands.

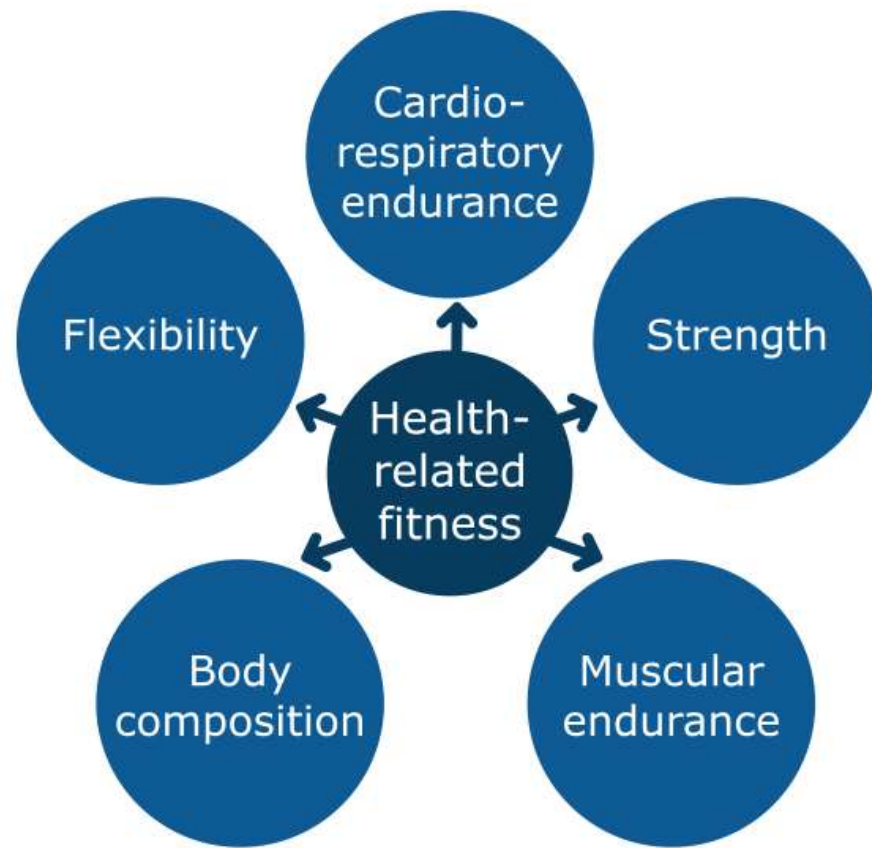
TASK 1.1 (b)



Compare and contrast the daily demands of two different individuals. For example, an office worker and a professional footballer. You can do this by making a list of demands for each person.

- **What is fitness?**
- *Fitness is the ability of your body to comfortably meet its daily demands and still have energy to cope with emergencies.*







**CARDIO-RESPIRATORY
ENDURANCE IS THE ABILITY
OF THE CARDIO-RESPIRATORY
SYSTEM TO TAKE IN, TRANSPORT,
AND USE OXYGEN TO MAINTAIN
AEROBIC PERFORMANCE.**

- **Strength** is the ability of the muscles to exert force against a resistance.
- Dynamic strength is the application of force through movement – lifting a weight.
- Explosive strength involves the use of speed and force – throwing a weight.
- Static strength involves applying your maximum strength to an immovable object e.g. holding a weight above your head.



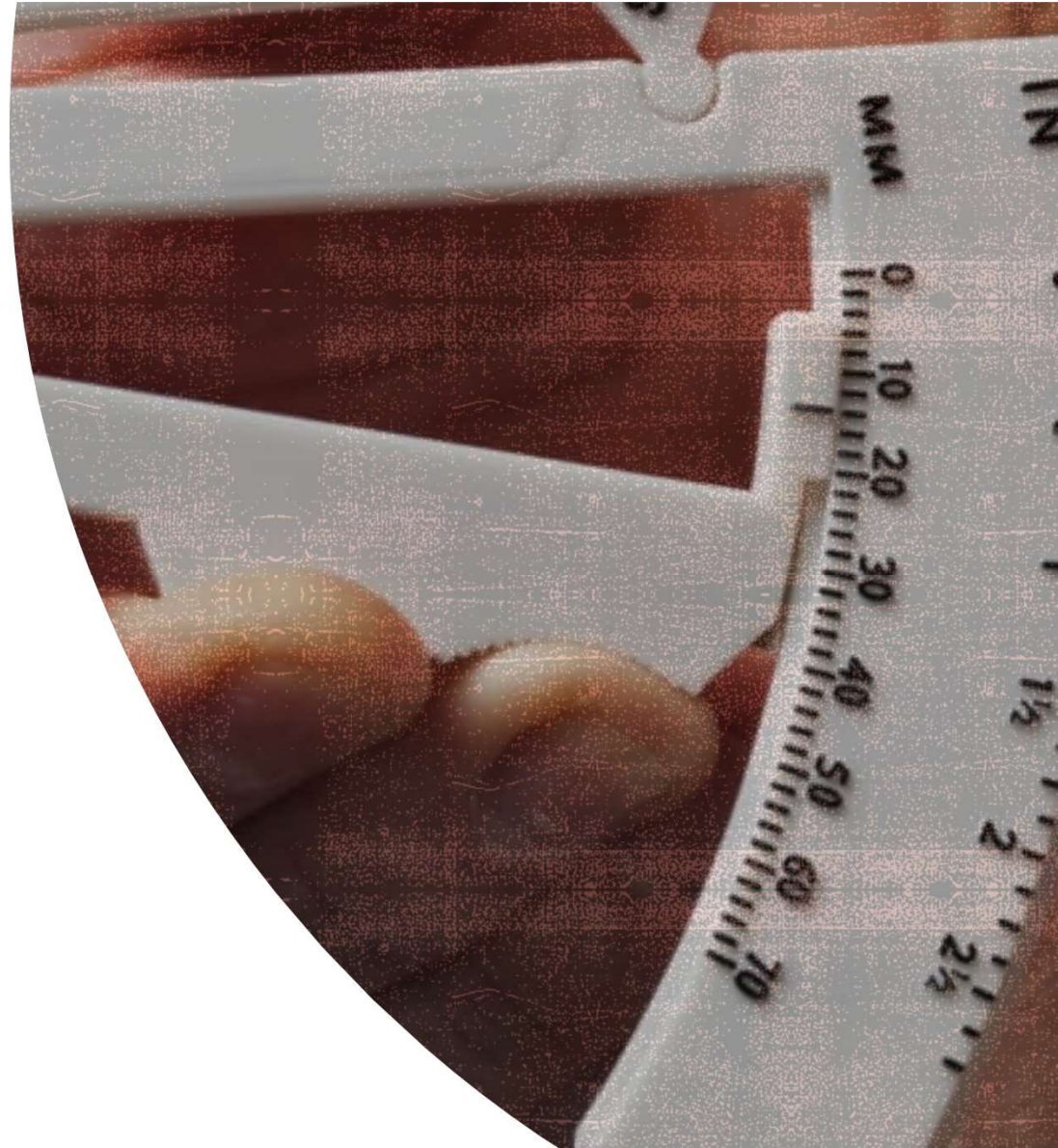
**FLEXIBILITY IS
THE RANGE OF
MOVEMENT AT A
JOINT.**



**MUSCULAR ENDURANCE
IS THE ABILITY TO REPEAT
CONTRACTIONS FOR A
SIGNIFICANT PERIOD OF
TIME.**



BODY COMPOSITION IS THE AMOUNT OF FAT MASS COMPARED TO LEAN BODY MASS IN THE BODY. IT IS USUALLY EXPRESSED AS A PERCENTAGE OF TOTAL BODY MASS.

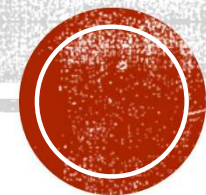


Example from physical activity	Fitness component
A rugby player forcing back his opponent	
A gymnast performing a straddle	
A football player taking a shot from 20 yards	
A cyclist completing a 100km stage race	
A gymnast performing the crucifix on the rings	
A swimmer performing the 400m freestyle	
A boxer preparing for a weigh-in before a fight	

TASK 1.2



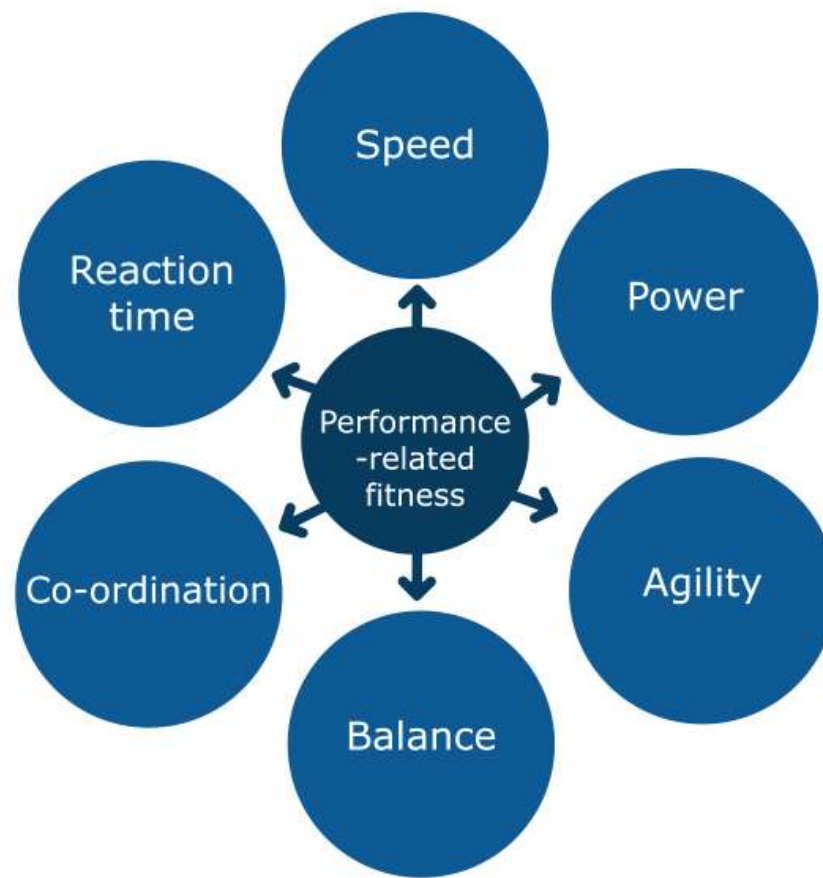
Copy the table and identify each component of health-related fitness from the example.



PRACTICE QUESTIONS

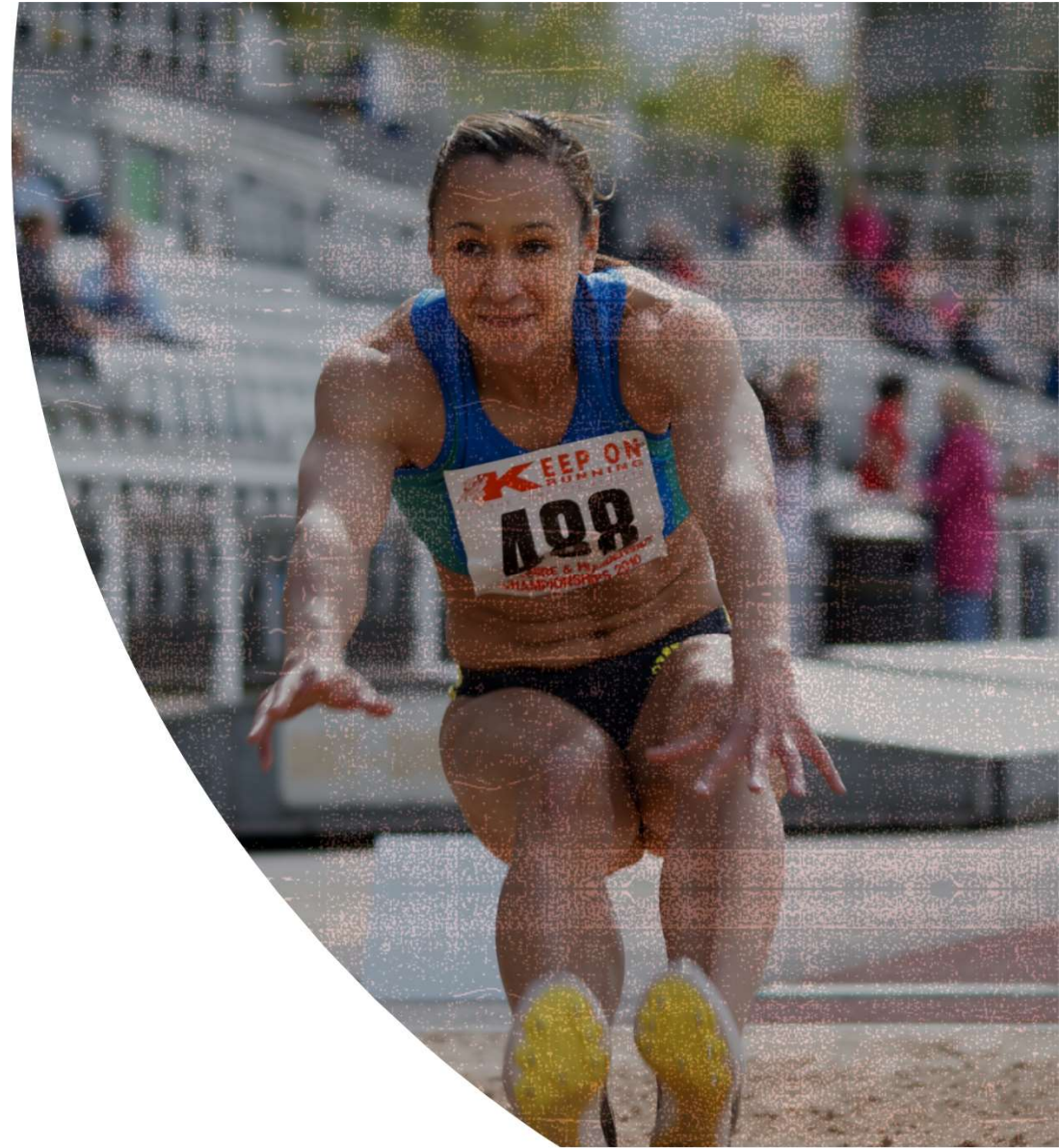


- Q1.** Cardio-respiratory endurance is the ability of the heart and lungs to supply oxygen to the working muscles. Explain why a marathon runner would require a higher level of cardio-respiratory endurance than a 100m sprinter.
- Q2.** Compare the body composition of a rugby front row to that of a full back in terms of muscle and fat mass.
- Q3.** Discuss whether maximum strength or muscular endurance would be more beneficial to an Olympic 2000m rower. Explain your answer.
- Q4.** Identify the type of strength required for each of the following activities:
- (a) Weightlifting
 - (b) Sprinting
 - (c) Rugby scrum.



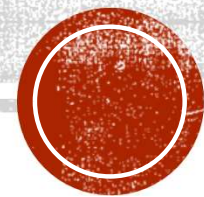
**POWER IS THE ABILITY
TO PERFORM A
STRENGTH CONTRACTION
QUICKLY**

STRENGTH X SPEED

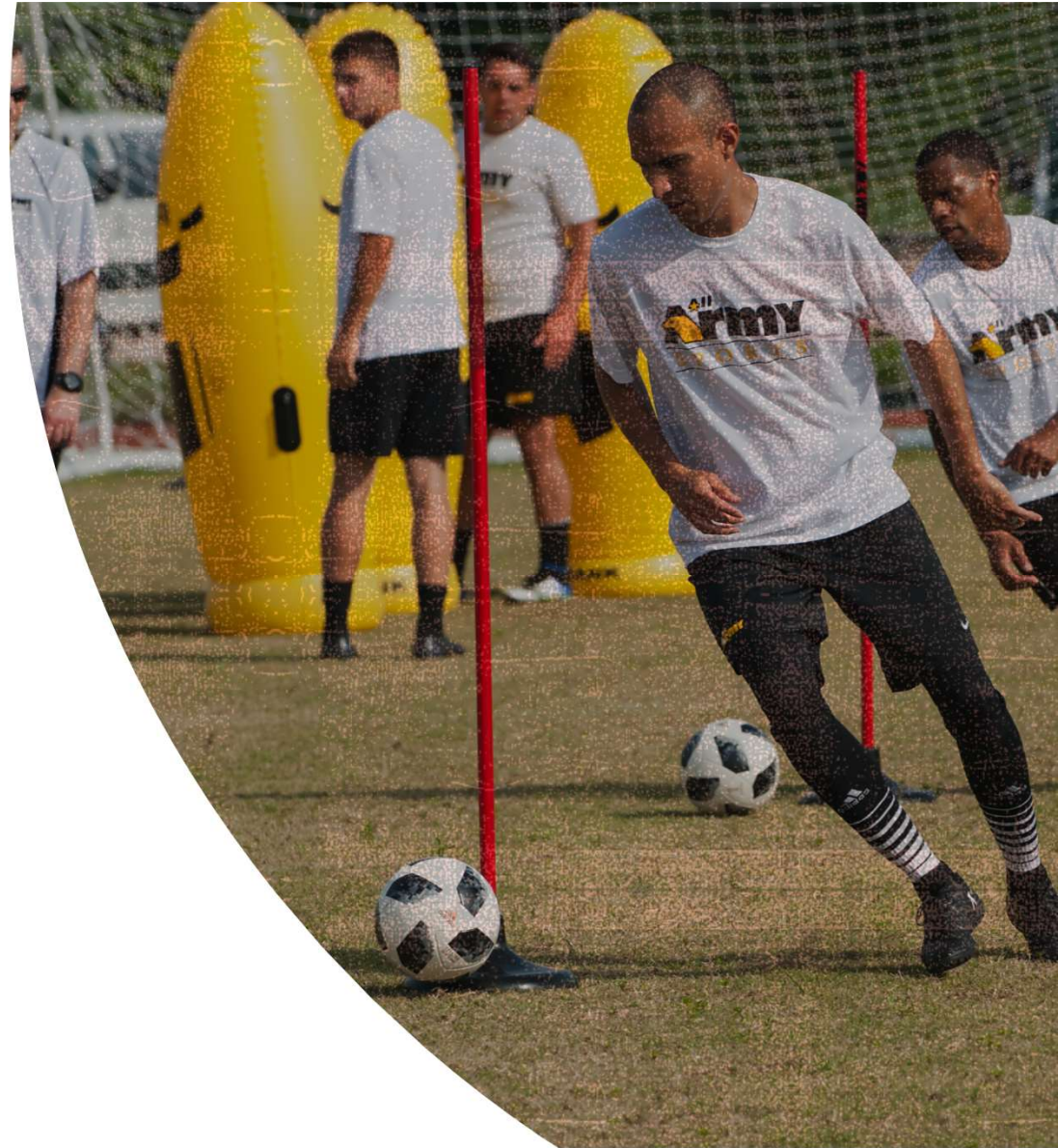




SPEED REFERS TO
HOW QUICKLY A
PERSON CAN MOVE
OVER A SET
DISTANCE OR THE
ABILITY TO PUT
BODY PARTS INTO
MOTION QUICKLY.



**AGILITY IS THE
ABILITY TO CHANGE
DIRECTION QUICKLY
WITHOUT LOSS OF
SPEED OR BALANCE.**





BALANCE IS THE ABILITY TO MAINTAIN YOUR CENTRE OF MASS ABOVE YOUR BASE OF SUPPORT. IT CAN BE STATIC (NO MOVEMENT) OR DYNAMIC (WITH MOVEMENT).



REACTION TIME IS THE TIME TAKEN TO RESPOND TO A STIMULUS E.G. THE STARTER'S GUN IN THE 100M.



CO-ORDINATION IS THE ABILITY TO MOVE TWO OR MORE BODY PARTS TOGETHER IN AN ORGANISED WAY. IT SHOULD BE A SMOOTH, EFFICIENT AND EFFECTIVE ACTION.

Example from physical activity	Fitness component
A diver performing a handstand on the edge of the 10m board	
Avoiding a jab at close range in boxing	
Performing the serve in badminton	
A long jumper at take-off	
A sprint finish in the 800m	
Avoiding a tackler in rugby	

TASK 1.3

Copy the table and identify each component of performance-related fitness from the examples.

