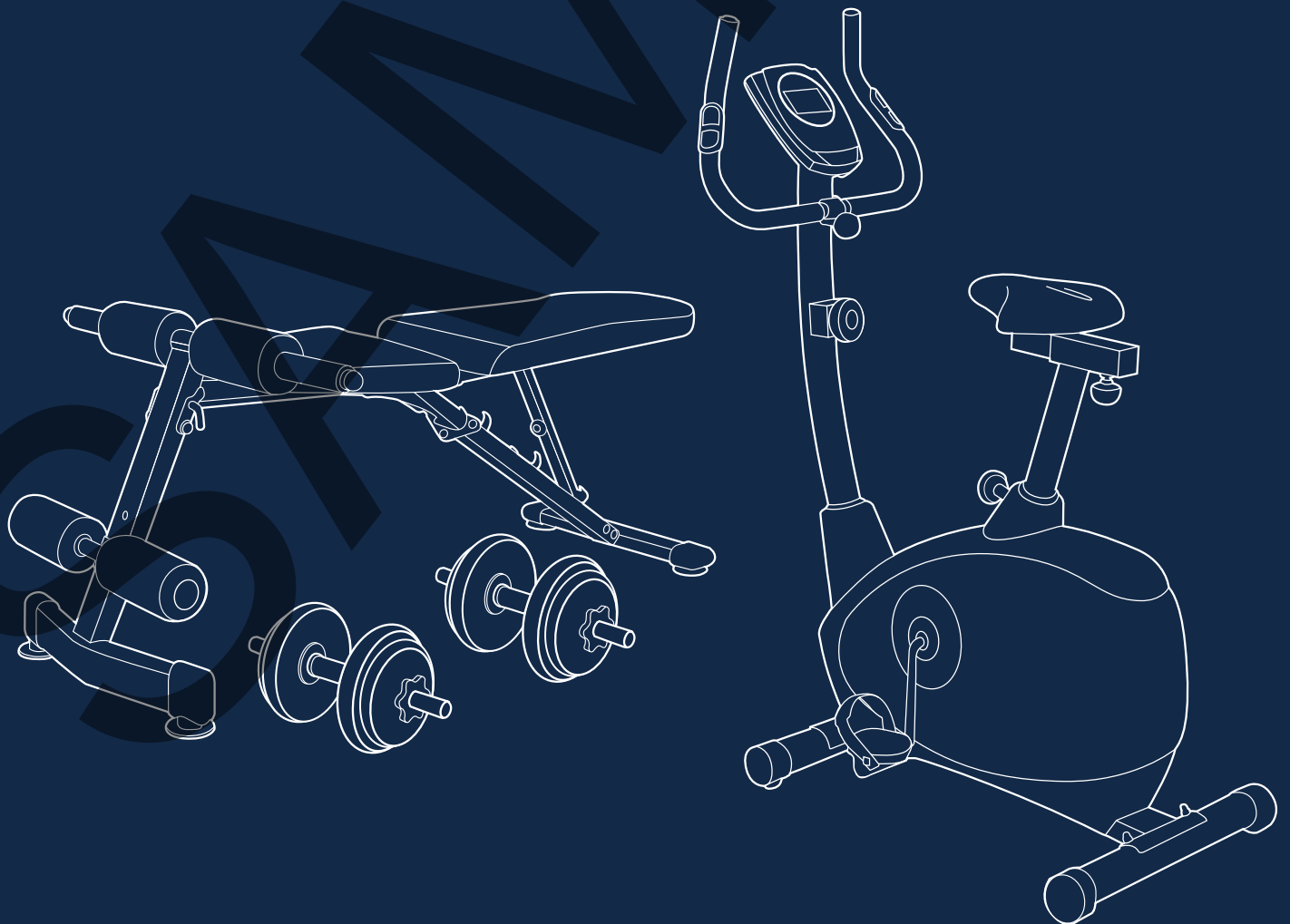


Exercise

Level 1

Principles of exercise and fitness



In Unit 1 you will learn about health and fitness, the factors that affect fitness, basic anatomy and physiology, dietary requirements and the effects of exercise on your body.

The key learning points for this workbook are that you understand:

- The types of exercise activities and reasons for doing them.
- The main components of fitness and the factors that affect your fitness.
- The importance of correct nutrition and dietary requirements for a fitness programme.
- Basic anatomy and physiology.
- The effects of exercise on your body.

Content

This workbook contains five sections:

Page

Section 1	Health and fitness	2
Section 2	Factors affecting fitness	10
Section 3	Dietary requirements	18
Section 4	Basic anatomy and physiology	29
Section 5	Effects of exercise	35

Assessment

Each section has an assessment that you should complete once you have worked your way through the sections and the learning activities. When you have completed all the section assessments for this unit, you should submit them to your tutor who will give you detailed written feedback on your work. The Unit Assessments can be found in your course folder.

- **Assessment 1: Health and fitness**
- **Assessment 2: Factors affecting fitness**
- **Assessment 3: Dietary requirements**
- **Assessment 4: Basic anatomy and physiology**
- **Assessment 5: Effects of exercise**
- **Multiple-choice questions**

Health and fitness

This section will introduce you to the different types of exercise that people can take part in and explain some of the reasons they take part. It will also explain the four 'S's of **'fitness'**.

Exercise can take many different forms. Sport is exercise. Recreational activities such as walking and tenpin bowling are exercise. Walking or cycling to and from work are exercise. Household chores such as gardening and vacuuming are also exercise. In fact, any activity that requires movement and energy is exercise.

What types of exercise are there?

There are several different kinds of exercise.

- **Exercise and fitness, physical training and conditioning** (step aerobics, running, cycling, swimming, weights, circuits, cardio vascular (CV) resistance training, spinning, pilates).
- **Coaching** (classes for different levels of ability such as learning to swim and football coaching).
- **Game sports** (football, hockey, rugby league and union).
- **Racket sports** (tennis, squash, badminton).
- **Field sports** (cricket, bowls, rounders).
- **Accuracy sports** (golf, archery, snooker).
- **Gymnastic activities** (gymnastics, trampolining, skating, diving).
- **Outdoor activities** (walking, mountain biking, hill climbing, orienteering, skiing, sailing).
- **Martial arts** (karate, aikido).
- **Combat sports** (boxing, judo).



Activity 1: Are you active?

More people than ever before are becoming 'active'. Think back to the last time you exercised and answer below.

When did you last exercise?

How long did the session last?

What did you do?

How often do you exercise in a week?

Why did you exercise?

Is exercise a regular routine?

Why people join a health club or take up a sport

There are several reasons why people take part in exercise. These reasons include:

General health

- to keep your weight down
- to recover from an injury or illness

Mental well-being

- stress relief
- energy release

Specific sports training

- to improve technique
- to improve skills

Social and recreation

- to meet new friends
- as a hobby

So what is fitness?

Key point

Fitness is about your body being able to do what you want and need it to do.

If you are not basically fit, you won't be able to enjoy taking part in exercise or sport. In fact, if you are really unfit, you won't be able to do anything very much other than walking short distances and sitting around! You will also not feel as well as someone who leads a more active life.

How **fit** you are depends on how **active** you are. If you walk a mile or two every day, or ride a bicycle to work, you are probably basically fit.

But if you want to be fit enough to play and enjoy exercise and sports, you will have to do more than that.

One way of improving your fitness is by taking exercise either in a gym, an exercise class or in your own home. If you do this regularly, your body will adapt to the demands you make on it. You will get fitter, you will enjoy your favourite sport more, and you will probably get better at it. You will also feel better in yourself.

In Unit 3 you will learn about tests which measure fitness levels. You will also learn about how to improve your own level of fitness through training and monitor any improvements you make as a result of training.



Activity 2: What motivates you to take part in exercise activities?

When you take part in exercise or sport, have you ever thought about why you do it?

Think of your favourite exercise or sport and try to complete the table below.

Give a score out of ten to each of the seven reasons listed in the table.

Reason	General health	Mental well-being	Training for sport	Social and recreation	Just because	Excitement	Reward
Score out of 10	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
(1 being not important, 10 being extremely important)							
Which ones are the most important to you?							
Are there any other reasons you can think of?							

Health and fitness

Key point

Health and fitness are two terms which some people think mean the same thing. But there is a difference.

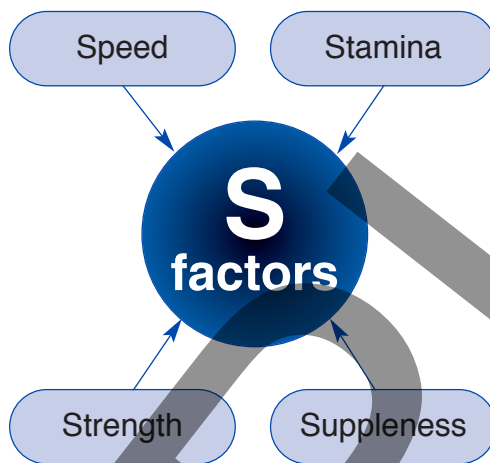
Being fit is central to your general health and feeling of well being. Fitness for sport is more specific than just being in a state of good health. For example, a person who is fit for work as a bus driver may be dangerously unfit for a game of squash. Fitness is crucial to success in sport and exercise.

Being healthy means more than not being sick or ill.



The four 'S's of fitness

There are four main aspects of fitness. They are sometimes called the 'S' factors.



Speed

Speed can mean two things:

1. Speed can refer to **movement**, that is, how long it takes you to travel a particular distance, for example in running, swimming, skiing, cycling and rowing. The greater an athlete's speed, the less time it takes to cover a distance.
2. Speed is also an important aspect of your **reactions**. For example, a sprinter must react immediately to the starting gun, a goalkeeper must react quickly to a penalty kick, and a tennis player has to react to an opponent's serve. If you are fit, your reactions are faster and you respond more quickly.



Activity 3: Speed

There are two types of speed – speed of movement and speed of reactions.

Different sports or exercise require different types of speed. Looking at the table below, which type of speed do you think is most important in the following activities? Place a tick in the appropriate box. In some cases both types of speed are needed, but think about which is the most important.

Sport/exercise	Speed of movement	Speed of reactions
100 metre sprinter during race	<input type="checkbox"/>	<input type="checkbox"/>
Tennis player returning a serve	<input type="checkbox"/>	<input type="checkbox"/>
Hammer thrower during the wind up phase	<input type="checkbox"/>	<input type="checkbox"/>
Goalkeeper facing a penalty kick	<input type="checkbox"/>	<input type="checkbox"/>
Running for a bus	<input type="checkbox"/>	<input type="checkbox"/>

Check your answers at the end of this workbook.

Stamina

Stamina is about how **long** your body can **carry on working** before you get so tired that you cannot perform properly. It is sometimes called '**endurance**'. Stamina is more important in some sports than in others. For example, marathon runners need great stamina, whereas high jumpers need much less. However, if you are going to take part in any regular exercise or sport, you are going to need stamina.

There are two types of stamina:

1. **Cardio-vascular stamina** – this is about your body's ability to supply oxygen to your muscles. It is the ability of the lungs and heart to deliver oxygen for a **long period of time**.
2. **Local muscular stamina** – this is about a particular **muscle's ability** to go on working without getting tired. For example, being able to perform a number of repetitions of a bench press in a gym.



Activity 4: Stamina

There are two different types of stamina – cardio-vascular and local muscular.

Different sports or exercise require different types of stamina. Looking at the table below, which type of stamina do you think is more important in the following activities?

Please tick in the appropriate box.

Sport/exercise	Cardio-vascular	Local muscular
Cyclist in the Tour de France	<input type="checkbox"/>	<input type="checkbox"/>
Weightlifter	<input type="checkbox"/>	<input type="checkbox"/>
Step aerobics instructor	<input type="checkbox"/>	<input type="checkbox"/>
Carrying the shopping to the car	<input type="checkbox"/>	<input type="checkbox"/>
Running for a bus	<input type="checkbox"/>	<input type="checkbox"/>

Check your answers at the end of this workbook.



Strength

Strength refers to how much **force** you can **exert** when your muscles are working against a weight or some other sort of resistance. Strength is especially important in activities like weightlifting, climbing, and rugby scrums. However, as with stamina, all successful sports-players need to develop their strength.

There are three different types of strength:

1. **Explosive strength** – is the **energy** you use in a single explosive action, such as jumping or throwing.
2. **Dynamic strength** – is the **ability** of your **muscles** to move or support your body over a long period of time (for example, a downhill skier needs dynamic strength).
3. **Static strength** – is the **force** you can apply to an object that will not move easily, such as in tug-of-war or weightlifting.

Activity 5: Strength

There are three different kinds of strength – explosive, dynamic, and static. Different sports or exercise require different types of strength.

Looking at the table below, which types of strength do you think are most important in the following activities?

Place a tick in the appropriate box.

Sport/exercise	Explosive	Dynamic	Static
Downhill skiing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High jumping	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weightlifting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Check your answers at the end of this workbook.



Suppleness

Suppleness refers to how far you can **move** and **bend** your body at the joints. It is sometimes called '**flexibility**'. Some sports require more suppleness than others, for example gymnastics. However, even footballers have to work hard on their suppleness if they are to be able to move easily and quickly and reduce the risk of injury.



Activity 6: Suppleness

There are some sports which require more suppleness than others.

Looking at the table below, can you state which sports or activities you think require more flexibility? Rank the sports from 1 to 5, number 1 being the most suppleness needed and 5 being the least.

Sport/exercise	Ranking
Floor routine in gymnastics	<input type="checkbox"/>
Weightlifting	<input type="checkbox"/>
Football	<input type="checkbox"/>
High-board diving	<input type="checkbox"/>
Darts	<input type="checkbox"/>

Check your answers at the end of this workbook.

As you can see, **fitness is a blend** of a number of **physical qualities**. Everyone needs these qualities to a greater or lesser extent. There is a basic level of fitness that you need to ensure good health. It is called health-related fitness.

Key point

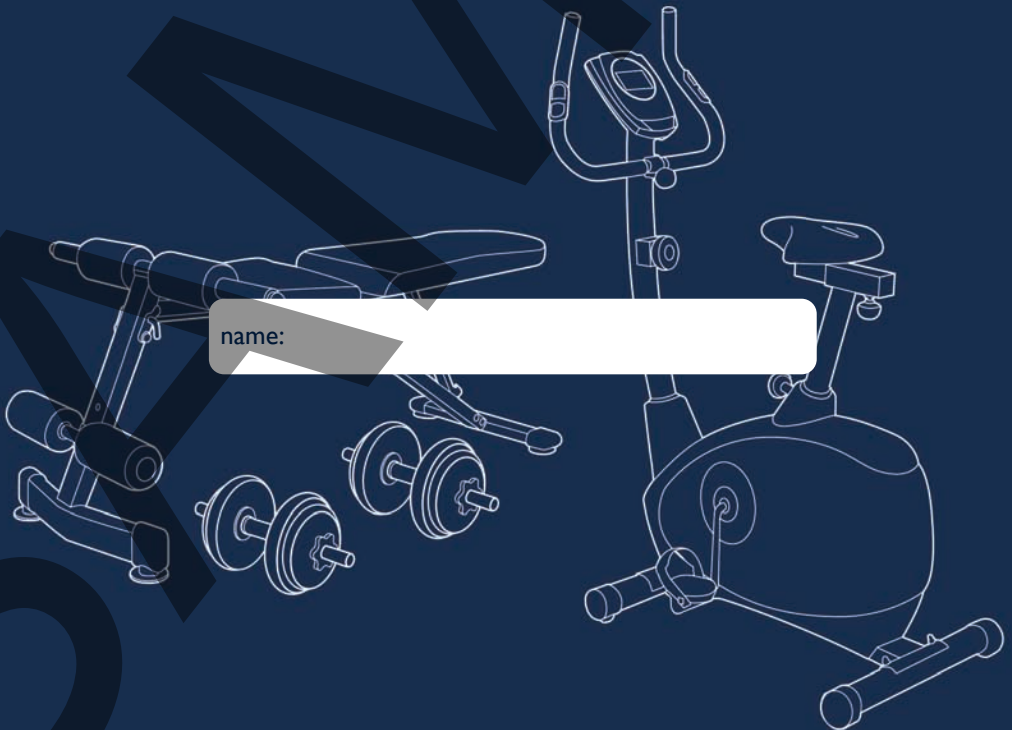
When taking part in sport or exercise, you should know that different activities need different types of fitness. A marathon runner may be quite unfit for lifting weights, whilst the weightlifter may not be able to run long distances.

TRIBAL



exercise diary

name:



Unit 3 Assessment: Exercise Diary

PERSONAL DETAILS

Name _____

Contact address _____

Postcode _____

Telephone no. (evening) _____ (day) _____

E-mail _____

CANDIDATE STATEMENT

I certify that I have read Workbook 3 and completed the Exercise Diary.

I confirm that this is my own work.

Signature _____ Date _____

For office use only

Student ref: _____

Assessor: _____

IV: _____

Passed

Date

Re-submit

Date

Tutor feedback:

Written

Telephone

Personal tutorial

How to complete this exercise diary

Your exercise programme will run over a three-week period and will involve the six stages shown below.

Stage 1 **Completing the pre-exercise screening questionnaire** 3

Stage 2 **Measuring and recording your fitness level: First Fitness Profile** 4

Stage 3 **Setting your objectives** 5

Stage 4 **Completing exercise activities and recording your progress** 6

Stage 5 **Re-testing your fitness level: Second Fitness Profile** 18

Stage 6 **Evaluating how successful the programme has been** 19

When you have completed all of the above stages you should submit this Exercise Diary to your tutor for assessment. If you require any advice or guidance during the exercise programme, please contact your tutor.

Please also remember to complete the candidate information on page 1.



WARNING

If you feel any sudden pain or discomfort across the chest, problems with your breathing, or pains in the joints, then stop your exercise immediately. Inform your doctor of these symptoms.

Stage 1

Pre-exercise screening questionnaire

Name:

Date:

Completion of this questionnaire is the first step when planning your exercise programme. Please read each question carefully and answer every question.

- | | Yes | No |
|--|--------------------------|-------------------------------------|
| 1. Has your doctor said that you have a heart condition and that you should only do physical activity recommended by a doctor? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. When you do any physical activity do you ever feel pain or tightness in your chest? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Do you ever have any chest pain when not doing physical activity? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Have you ever felt faint or had spells of dizziness? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Do you have any joint or bone problems that could be made worse by a change in your physical activity? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Have you ever suffered from high blood pressure? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Are you currently on any medication that could affect your health by a change in your physical activity? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Are you pregnant or have you had a baby in the last six months? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Are you over 69 years of age? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Do you know of any reason why you should not exercise or increase your physical activity? | <input type="checkbox"/> | <input type="checkbox"/> |

If you answered **YES** to any of the above questions, talk to your doctor **BEFORE** you start your exercise programme. Tell your doctor your intentions and discuss your concerns.

If you answered **NO** to all questions, you can be reasonably confident that you can safely increase your level of physical activity over a period of time.

If your health changes so that you then answer **YES** to any of the above questions, contact your doctor and discuss your concerns.

If at any time you are worried about your health, contact your doctor before continuing with your exercise programme.

Unit 1 Assessment

Principles of exercise and fitness

Please peel off the assessments and complete each question. When you have completed them staple together with this header sheet at the front and return them to your tutor.

ADVICE TO ALL CANDIDATES

- Please complete your personal details and candidate statement below.
- Complete all sections of these assessments.
- Write your answers in the boxes provided. Add any additional work for any of the questions on plain paper and attach to the assessments.
- You do not need to return your completed activities in the unit – just these assessments.
- Your work will be marked and you will receive written feedback from your tutor within three weeks.
- If you require any assistance or guidance, please contact your tutor.

PERSONAL DETAILS

Name _____

Contact address _____

Postcode _____

Telephone no. (evening) _____ (day) _____

E-mail (home) _____ (work) _____

CANDIDATE STATEMENT

I certify that I have read Unit 1 and completed the assessments.

I confirm that this is my own work.

Signature _____ Date _____

For office use only

Student ref:

Assessor:

IV:

Passed

Date

Re-submit

Date

Tutor feedback:

Written

Telephone

Personal tutorial

UNIT 1: PRINCIPLES OF EXERCISE AND FITNESS

UNIT 1, ASSESSMENT 1: HEALTH AND FITNESS

(See Unit 1, Section 1)

1.1 There is a wide range of sports, activities and exercises that people can participate in. These can be grouped into ten different categories as shown below in the left hand column.

Complete the table by giving two examples of sport or activity for each category listed.

Category	Sport/activity– example 1	Sport/activity – example 2
Exercise and fitness		
Physical training and conditioning		
Coaching		
Game sports		
Racket sports		
Field sports		
Accuracy sports		
Gymnastic activities		
Outdoor activities		
Martial arts		
Combat sports		

1.2 CASE STUDY

Jane is 39 years of age and is currently 20 pounds (or 9 kilograms) overweight. She suffers from asthma although controls this with the use of an inhaler. Her doctor has recommended that she take up an exercise programme to help her lose weight, improve her all round fitness levels and release some energy.

She has agreed to do this and has had her first induction at the local gym. She now exercises twice a week during the women's only session, which she enjoys as there are other, like-minded people trying to achieve similar goals. She has already started to feel the benefits of her exercise programme having lost 3 pounds (or 1.4 kilograms) within the first week. She is now committed to looking and feeling better with the added bonus of meeting new friends and socialising.

a) Give reasons for Jane taking part in exercise

b) What are the benefits to Jane's health as a result of taking part in exercise?