

# 2. Be able to plan a fitness training session

## 2.1 Plan

When planning sessions, you should consider a number of different factors. One of the most important principles when planning individual sessions and full training programmes is the FITT principle.

### Frequency, intensity, time and type (FITT principle)

FITT stands for:

**F**requency – the number of session(s)

**I**ntensity – how hard the session(s) are

**T**ime – how long the session(s) last for

**T**ype – the activities that you will include in your session(s).

- **Frequency** of a training session or programme refers to the number of training sessions per week. While the frequency of sessions is important, intensity and duration of training are more important: Novice trainers should not train more than three times per week until their levels of fitness can cope with the increased training load. Once your levels of fitness have increased, you could progress to five times per week.

- **Intensity** of a programme is closely linked with the training principle of overload – it is how hard you are working during your training. Intensity is one of the most important factors when designing a training programme and relates to factors such as weight, distance, heart rate percentages and speed.
- **Time** relates to the length of your training session.
- **Type** of exercise you complete will be related to your individual needs. It is the mode of training you will complete, for example free weight training.

## 2.2 Individuals

When planning your sessions, you need to take into account the type of individual that you are working with. It is not uncommon for personal trainers to work with a combination of elite athletes, trained individuals, untrained individuals or even teams. You need knowledge of each of their circumstances to plan the right type of session for each client.

## 2.3 Cardiovascular training

### Exercise intensities

See Table 9.1 for some general guidelines for cardiovascular exercise intensities.

Guidelines for aerobic training			
Level	Percentage of age predicted maximum heart rate	Duration (per session)	Frequency
Beginner	60	20 minutes	3
Advanced	90	20–50 minutes	5

Table 9.1: Guidelines for aerobic training

Another way of looking at cardiovascular exercise intensities is to see them as zones of training.

- **Warm-up or cool down zone** – the first cardiovascular training intensity is often known as the warm-up/cool down zone. This zone is at around 50 per cent of your maximum heart rate and is mainly for the sedentary or unfit person that wants to start training.
- **Active recovery zone** – this zone is approximately 60 per cent of your maximum heart rate. It is useful for aiding recovery, removing waste products and provides a good next step for those new to cardiovascular training.
- **Fat burning zone** – the fat burning (or weight management) zone is at 60–70 per cent of your maximum heart rate. It is a progression for people from the moderate aerobic zone once they have increased their fitness levels, but is also used by athletes training for long distance events such as a marathon. You may use continuous training when training in this zone.
- **Aerobic fitness zone** – this zone is at 70–80 per cent of your maximum heart rate and is the zone where you develop your aerobic endurance. This zone is suitable for more active or trained individuals.
- **'Target heart rate' zone** – this zone occurs at approximately 60–75 per cent of your maximum heart rate (but has sometimes been known to go as high as 85 per cent). This is the zone that has the greatest benefits for cardiovascular health and for improving the body's ability to use fat as an energy source.
- **Peak performance zone** – this zone occurs at 80–90 per cent of your maximum heart rate and is your highest zone of cardiovascular training. This training zone is geared towards competitive sport and will help you develop speed. It is at this training zone that you will alter your anaerobic threshold. You will often use up-tempo methods such as fartlek and interval training when training through the aerobic fitness and peak performance zones.
- **Anaerobic threshold** – have you ever run for a while and your legs have started to get hot, tight and achy? These are signs that you are close to your anaerobic threshold. Your anaerobic threshold is the point where you can no longer meet your energy requirements of exercise using your aerobic energy

system, so your body produces energy using your anaerobic systems. This is the point that your blood lactate levels increase significantly. Training at high percentages of your maximum heart rate helps to increase this threshold, allowing you to train at higher intensities and longer durations while still using your aerobic energy system. Training close to your **anaerobic threshold** significantly stresses your cardiovascular system so is not suitable for inexperienced trainers.

## Key term

**Anaerobic threshold** – the point at which aerobic energy sources can no longer meet the demand of the activity being undertaken, so there is an increase in anaerobic energy production. This shift is also reflected by an increase in blood lactate production.

## Monitoring intensity

When training yourself or working with a client, you must monitor the intensity of the session to ensure that it is as effective as possible and so that your client is not at any risk. Common methods of monitoring intensity include:

- observing your client
- the talk test
- the rating of perceived exertion (RPE)
- age predicted maximum heart rate
- the Karvonen (or heart rate reserve) formula.
- **Observation** – how many times have you been training and ended up tired and red-faced? This is just one of the things that you can look for when observing people while training. Observing people is a subjective way of monitoring progress, but can be very useful. When observing people, look for changes in exercise technique, skin colour, changes in breathing patterns and excessive sweat levels.
- **Talk test** – think about when you're exercising and how much harder it becomes to talk to people as the exercise time continues. The American College of Sports Medicine states that if you are able to hold a conversation at the same time as breathing rhythmically while exercising, you are probably working at an acceptable level for cardiovascular training.

- **Rating of Perceived Exertion (RPE)** is a scale (see Table 9.2) that runs from 6–20 and reflects heart rates that range from 60–200 beats per minute. For example, if you are exercising and you give a rating of 13 (somewhat hard), this gives an equivalent heart rate of 130 beats per minute.

Rate of Perceived Exertion	Intensity	Heart rate equivalent
6		60
7	very, very light	70
8		80
9	very light	90
10		100
11	fairly light	110
12		120
13	somewhat hard	130
14		140
15	hard	150
16		160
17	very hard	170
18		180
19	very, very hard	190
20		200

**Table 9.2:** Rating of Perceived Exertion (RPE)

It can take some time to learn how to use this rating correctly, so use it with other methods of assessment until you and your client are used to it. One problem with the RPE scale is that it is based on you having a maximum heart rate of 200 beats per minute, which won't always be the case.

- **Maximum heart rate** – monitoring heart rate during cardiovascular training sessions helps you see if you're working hard enough or should work harder. You can use your maximum heart rate and the Karvonen formula to set target training zones and use heart rate monitors to monitor your heart rate and ensure you are within the correct training zone.

You can calculate your maximum heart rate (MHR) by using the simple equation:

$$\text{maximum heart rate} = 220 - \text{age (in years)}$$

This can then be used as part of the Karvonen formula to calculate appropriate training zones (see below).

## Activity: Calculating your heart rate zones

For each of the different training zones highlighted above, calculate your training zone based on the percentage of your maximum heart rate.

- **Karvonen formula (heart rate reserve)** was suggested to find target heart rates and training zones for people in cardiovascular training. It uses MHR and resting heart rate (RHR) to calculate your heart rate reserve in the following equation:

$$\text{heart rate reserve (HRR)} = \text{MHR} - \text{RHR}$$

Karvonen suggested that a training intensity between 60 and 75 per cent of MHR is suitable for the average athlete. The training heart rate intensity (or zone) is calculated using the equation:

$$\text{training heart rate \%} \times (\text{HRR}) + \text{RHR}$$

This case study below demonstrates how training zone could be used.

## Case study: Mike, 20-year-old swimmer

Mike is a 20-year-old swimmer with a RHR of 60 beats per minute. He has been instructed by his coach to train at 60–75 per cent of MHR.

- Training heart rate = 60 per cent  
 $= 0.60 (\text{HRR}) + \text{RHR}$   
 $= 0.60 (200 - 60) + 60$   
 $= 84 + 60$   
 $= 144 \text{ beats per minute}$
- Training heart rate = 75 per cent  
 $= 0.75 (\text{HRR}) + \text{RHR}$   
 $= 0.75 (200 - 60) + 60$   
 $= 105 + 60$   
 $= 165 \text{ beats per minute}$

From this, you would be able to tell Mike that he needs to be working at an intensity of 144–165 beats per minute and would be able to monitor this intensity using a heart rate monitor.

What are the benefits for Mike of training at this intensity?

If you were in Mike's position and had to train at 60–75 per cent of your MHR, what would your training heart rate be?

## Anaerobic threshold

Refer back to page 243 for a description of anaerobic threshold.

## Work/rest ratios

You need to get the right work/rest ratio when using training methods such as interval training. Table 9.3 on page 248 demonstrates guidelines for interval training for different type of training sessions.

### Remember

You have to work at the correct intensity for the correct period of time to be able to get the correct training effect.



## 2.4 Resistance training

When designing your resistance training session, find out your primary goal as there are different training sessions for improving strength, power, muscle size or muscle endurance. Try to work on one training outcome per session/programme as this will give you the best results (for example, working on power and muscular endurance produces fewer gains than working on endurance alone).

### Choice of exercises

When designing resistance sessions, there are hundreds of exercises to choose from. Make sure that you choose activities that meet the needs of the individual and the sport and keep them as simple as possible. Generally, resistance exercises fall into one of two categories: **core exercises** and **assistance exercises**.

Core exercises:

- focus on large muscle areas such as the chest, back or thigh
- involve two or more joints (called multi-joint activities)
- have more impact on sporting movements.

Assistance exercises:

- focus on smaller muscle areas (such as the upper arm or lower leg)
- involve one joint (single joint exercises)
- have less importance when you are trying to improve sport performance.

### Key terms

**Core exercises** – focus on large muscle areas, involve two or more joints and have more direct impact on sport performance.

**Assistance exercises** – focus on smaller muscle areas, only involve one joint and have less importance when trying to improve sport performance.

### Number of exercises

The number of exercises you will do during a resistance training session depends on your training goals. Generally you need to ensure that there aren't too many exercises as this could lead to injury. Where you use more than one exercise for an area or muscle group, make sure that you alternate these exercises with other areas or muscles.

### Order of exercises

There are different ways to structure your resistance training session but structure exercises so you can create as much force as possible in each exercise, while maintaining correct technique and allowing adequate rest between exercises. Three common techniques used to order exercises are to:

- complete core exercises before assistance exercises
- have exercises that alternate between upper and lower body exercises
- alternate push and pull activities.

### Rest between sets

Think about when you have attempted any exercise feeling fine and then when you are tired. You will probably have made more mistakes in technique and performance, had lower effort levels and may have been injured when trying to exercise while fatigued. Allow adequate recovery between sets for performance reasons and health and safety reasons.

### Speed of movement

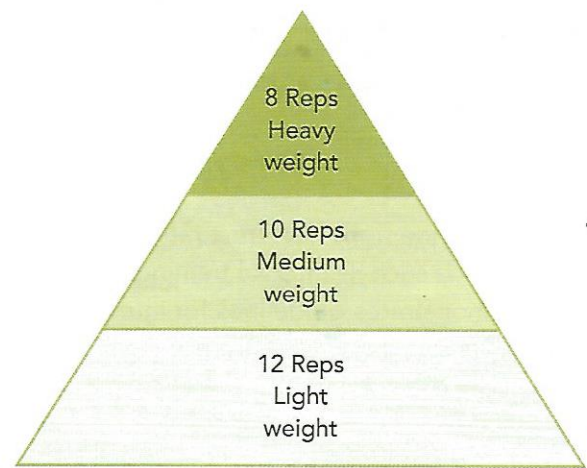
With resistance training, it is not only the repetitions, sets, load and rest that influence the adaptations that the body will experience, the speed of movement is also important. When performing the exercise in a slow

and controlled fashion, you will move the joint through the full range of motion and develop the highest force through the full range. This results in the greatest strength gains. Take 4 seconds from the start point of the exercise to the end of the range of motion and 2 seconds to return the resistance to the start point.

## Systems of training

There are different systems of training designed to be used by all trainers from novice to experienced. For example, a simple circuit could be used with a novice trainer whereas pyramid training could be used for somebody who wants to increase their power. You should use these systems when planning resistance training sessions for yourself or your clients; and you should use your goals (or the goals of your client) as one of the key factors in your choice of training system. While each of the systems has different benefits and is aimed at people of different levels, one thing that they all share is an aim to help you reach overload which will help you meet your training goals.

- **Simple circuit** – this normally consists of 8–10 exercises, of 15–25 repetitions and with a resistance of 40–60 per cent of your repetition max. It uses a range of multi-joint exercises and works the major muscle groups. This training system is useful for beginners as, through using multi-joint exercises and the major muscles, you will work the smaller muscle groups and develop exercise technique. You can adjust this system of training by altering the number of times the circuit is performed, the number of repetitions, the resistance used and the number of exercises.
- **Pyramids** – pyramid training is a form of multiple set training and develops different components of fitness, depending on whether you use light-to-heavy (ascending pyramid) or heavy-to-light (descending pyramid) methods. Using a descending pyramid is a more advanced training method so is more suited to experienced strength trainers.
- **Super sets** involve performing two or more exercises for the same muscle group in a row or working opposite muscle groups or muscle areas. Performing two or more exercises on the same muscle group (known as compound super sets) increases the stress placed on the working muscle as you can work it from different angles. The benefit of this is that you use more muscle fibres and increase the blood flow to the muscle. Some of the negative elements of this



**Figure 9.4:** Why do you think descending pyramid training is a more advanced method?

training are that it cannot be used in every training session because of the intensity of training and it can carry a high risk of injury and overtraining if you don't know how to do it correctly. Working opposite muscle groups or muscle areas has the advantage that blood is kept in the same area which increases blood flow, carrying more nutrients and oxygen to the working muscle. It is more time-efficient than other training methods as the rest periods are built in to the training (because you are working opposite muscle groups) reducing the overall training time. One key limitation of this training system is that it doesn't increase the overload in the same way as a compound set does, but an advantage is that it increases the demand on the cardiovascular system which helps increase your anaerobic threshold, lactate tolerance and muscular endurance.

### Take it further

#### Research advanced training methods

Using books and the Internet research the following advanced training methods:

- forced rep training
- drop sets
- pre-exhaust
- eccentric training
- split training.

When you are researching, try to find for each method:

1. a description
2. a sample session plan
3. the strengths and limitations.

## 2.5 Flexibility training

Flexibility training sessions often complement resistance training sessions (and vice versa) because they both improve muscle shape and size. Different factors to consider when designing flexibility training sessions include:

- the choice of exercises
- the number of exercises
- the order of exercises
- the number of repetitions
- the time.

### Choice of exercises

When designing flexibility training sessions, relate your choice of exercises to your aims or the aims of your client. Choose from static, dynamic and ballistics flexibility training exercises. A well-designed flexibility session bases the choice of exercises on the results of flexibility tests. If you identify areas of weakness, you will want to focus on these.

### Number of exercises

Your flexibility session should include approximately 10–12 exercises.

### Order of exercises

Structure your exercises so that your session works different areas of the body to reduce the risk of injury and so that your exercises get progressively harder to help overload the body. For example, dynamic flexibility sessions should start with low speed movements that replicate the sporting actions but don't stretch the muscle or joint to the maximum range of movement. The sessions should then get progressively faster and the range of movement should be pushed further gradually until you reach full speed movement that pushes the limits of flexibility.

### Repetitions

If you are a beginner starting a flexibility training programme, start by using three repetitions per exercise. As your flexibility increases, aim to increase this to five repetitions per exercise.

### Time

On average, you will spend about 15–30 minutes on a flexibility session depending on the type and

number of exercises to be performed. Each stretch should be held for between 6 seconds and 60 seconds, depending on the type of stretch you are doing. For example, static stretching could be held for up to 60 seconds. PNF stretching (see page 97) should have a 6 second contraction followed by 10–30 seconds of assisted stretching.

### Activity: Planning flexibility training

Using the guidelines for flexibility training, plan your own flexibility training session. Your session should allow you to improve flexibility in important body parts for your particular sport or activity. When you have done this, ask somebody (for example, a tutor or fitness instructor) to look over your plan to make sure that it is safe and then take part in your session. On completion, write down the good and bad points about your session and try to suggest ways to improve it.



## 2.6 Speed training

Although there are general guidelines (see Table 9.3 on page 248) for speed-based interval training, the more specific requirements are geared towards the requirements of specific sports and specific positions within those sports. During the training week, speed training should take place after a rest period or low intensity training to reduce the risk of injury or over-training. Within a training session, speed training should take place after the warm-up and any other training within the session should be low intensity.

### Time/distance

The time or distance of the sprint is dependent upon your particular sport. In most team sports, acceleration is more important than speed as you don't often hit maximum speed until approximately 50 metres, so most team sports will do speed training over distances of 10–30 metres; whereas an extended sprint athlete, such as an 800-metre runner, may use speed training distances of up to 400 metres at 2–3 seconds faster than their race pace.

## Repetitions

As with the time/distance, the number of repetitions is dependent on your sport. Team sports players may use up to 10 repetitions per set but extended sprint athletes, such as 800-metre runners, may only use up to 4 repetitions. A typical speed training session will consist of 5–10 repetitions when aiming to develop maximal speed.

## Sets

Depending on the time, distance and repetitions, you will use between 1–5 sets during a speed training session.

## Rest between sets

Depending on the intensity, repetitions and sets you are using as part of your training programmes, you may require rest periods of between 1–3 minutes in between sets. These rest periods will be essential for you to replenish energy stores, maintain correct technique and reduce the risk of injury.

## Work/rest ratio

A general guideline for maximal speed training is that there should be a work to rest ratio of 1:5, so if you were to have a 10-second maximal sprint, this would be followed by a 50-second rest period. As interval training is used in both running-based cardiovascular training and speed training, you could use the table below to plan training sessions for different energy systems.

Energy system	Time (min:sec)	Sets	Reps per set	Work: relief ratio	Relief interval type
ATP – PC	0:10	5	10	1:3	walking
	0:20	4	10	1:3	
ATP – PC – LA	0:30	5	5	1:3	jogging
	0:40	4	5	1:3	
	0:50	4	5	1:3	
	1:00	3	5	1:3	
	1:10	3	5	1:3	
	1:20	2	5	1:2	
LA – O <sub>2</sub>	1:30 – 2:00	2	4	1:2	jogging
	2:00 – 3:00	1	6	1:1	
O <sub>2</sub>	3:00 – 4:00	1	4	1:1	walking
	4:00 – 5:00	1	3	1:0.5	

Table 9.3: Guidelines for interval training

### PLTS

If you generate ideas and explore different possibilities that could be used in your different sessions (see Assessment activity 9.2 opposite), you could provide evidence of your skills as a **creative thinker**.

### Functional skills

If you bring together information regarding different training methods to suit the training programme (see Assessment activity 9.2 opposite), you could provide evidence of your **ICT skills**.

# 3. Be able to plan a fitness training programme

## 3.1 Collect information

One of the biggest problems for anybody trying to improve their fitness is that they often do the wrong type of training or their training programme is not structured properly. This leads to a lack of motivation for the individual as well as few training gains which will make the training programme useless. Collecting appropriate information about your client, such as goals, lifestyle information, medical history and physical activity history, means you will produce a more effective programme for your client.

### Remember

Collecting information about your client is important, not only for the effectiveness of your programme, but also for health and safety reasons and (if you are working as a self-employed personal trainer or fitness instructor) your own insurance purposes.



## Short-, medium- and long-term goals

An important part of designing training programmes is the individual's goals – without knowing these, you will not know what to direct your training towards. The programme must be flexible but capable of meeting these goals and personal needs. Each individual has different ambitions and aspirations, and your programme should reflect these. The athlete's goals should be broken up into short-term (up to one month) medium-term (one to three months) and long-term goals (three months to one year).

## SMART targets

When designing the training programme, set goals that are based on SMART targets:



**Specific** – they say exactly what you mean (for example, to improve flexibility in the hamstring muscle group)

**Measurable** – you can prove that you have reached them (for example, increase flexibility by 5 cm using the sit and reach test)

**Achievable** – they are actions you can in fact achieve (for example, you can practise and improve flexibility through training)

**Realistic** – you will be able to achieve them but they will still challenge you (for example, the increase in flexibility must be manageable – a 20 cm increase in two weeks is not achievable)

**Time-bound** – they have deadlines (for example, to reach the target within six weeks).

## Lifestyle

When designing a training programme, you need to know about different lifestyle factors such as alcohol intake, diet, time availability, occupation, family and financial situation; all of these will influence how you design a training programme for clients. The training programme should be built into a routine rather than becoming an extra stress as this will help adherence to the programme and will produce the best results.

### Take it further



Why do you think that it is important for the fitness instructor or personal trainer to know about all of the different lifestyle factors?

## Medical history

Before you design the programme, find out about the athlete's medical history. Ask them to complete a pre-exercise health questionnaire like the one shown in Figure 9.5 on page 251.

## Physical activity history

When designing a training programme, the fitness trainer must gain a picture of the athlete's history, including any health-related issues, asthma or recent illnesses. Previous activity levels are part of this picture. If the athlete has been involved in a structured programme and has a good level of fitness, assessed through fitness tests, then the programme should reflect this. The exercises prescribed should be at a moderate to high intensity. Another athlete may not

have exercised for a long time (one month or more) for reasons such as injury, illness or loss of motivation. In this case, the programme should initially be set at a lower level, in terms of number of sessions per week, duration and intensity.

## 3.2 Principles of training

Any fitness programme is based on the principles of training. Following these principles results in the greatest gains through your training. The principles of training can be remembered using the acronym SPORTI, which stands for:

**S**pecificity

**P**rogression

**O**verload

**R**eversibility/recovery

**T**edium

**I**ndividual differences.

### Specificity

The principle of specificity means that you should plan your training programme around the needs of the sport or activity (such as specific muscle groups, components of fitness or sporting actions) and your individual needs (such as targets that are specific to you rather than just general targets).

### Progression

Have you ever heard the phrase 'if you always do what you've always done, you'll always get what you've always got'? This is where progression is important because the only way your body adapts to training is if you keep making training progressively harder (increasing the levels of overload). Without correct levels of overload and progression, your training gains would start to level off (plateau). Be careful when planning progression because poor performances may result from too little progression or a training programme that overloads the system. As well as poor performance, excessive overloading may lead to injury or illness through over-training.

### Overload

Overload is stretching the body systems beyond their normal functional level and is an essential aspect of gaining training effects. The following areas can be adapted (increased or decreased) to control the level of overload:

**PAR-Q Physical Activity Readiness Questionnaire**

For most people, physical activity should not pose any problems or hazards. PAR-Q has been designed to identify the small number of adults for whom physical activity might be inappropriate or those who should obtain medical advice concerning the type of activity most suitable for them. Common sense is your best guide in answering these questions. Please read them carefully and check the Yes or No opposite the question if it applies to you.

Yes	No	Question
<input type="checkbox"/>	<input type="checkbox"/>	Has your doctor ever said you have heart trouble?
<input type="checkbox"/>	<input type="checkbox"/>	Do you frequently have pains in your heart and chest?
<input type="checkbox"/>	<input type="checkbox"/>	Do you often feel faint or have spells of severe dizziness?
<input type="checkbox"/>	<input type="checkbox"/>	Has a doctor ever said your blood pressure was too high?
<input type="checkbox"/>	<input type="checkbox"/>	Has your doctor ever told you that you have a bone or joint problem such as arthritis that has been aggravated by exercise, or might be made worse by exercise?
<input type="checkbox"/>	<input type="checkbox"/>	Is there any physical reason (e.g. illness, injury) for you to not follow an activity programme even if you wanted to?
<input type="checkbox"/>	<input type="checkbox"/>	Are you over the age of 65 and not accustomed to vigorous exercise?

**Figure 9.5:** Why is using a pre-exercise health questionnaire important for a fitness instructor or personal trainer?

- frequency: the number of sessions a week, for example, increasing from two to four
- intensity: the amount of energy needed to perform a particular exercise or activity
- duration: the total time an exercise session or activity takes, for example, a 20-minute session could be increased to a 30-minute session.

During your training, you will normally be trying to progress the overload to make sure that you keep seeing training effects, but there are times when you would want or need to reduce the overload.

These include:

- signs of over-training or burnout, such as injury, illness or severe decrease in motivation
- different times of the season (for example, off season or close to a major competition).

## Recovery and reversibility

Recovery time is essential within any athlete's training programme to allow for repair and renewal of the body's tissues. If you don't give the physiological system that you have been training the time that it needs to recover, you reduce your progression rate. However, a

marked decrease in training or complete inactivity (for example during an illness, the off season or a long-term injury) leads to a decrease in functional capacity which is detrimental to performance. This decrease in performance is due to the principle of training called reversibility, which is sometimes known as detraining.

## Remember

Reversibility leads to a dramatic and rapid reduction in fitness levels – faster than the improvements gained through overloading over a period of time.



- **macrocycles** – 1-year to 4-year training cycles
- **mesocycles** – monthly training cycles
- **microcycles** – weekly or individually planned training sessions.

Periodisation can benefit you because it ensures continued physiological and psychological changes, it prevents over-training injuries and boredom and helps to achieve peak performance for key events.

## Macrocycle

The first layer of a training programme may be based on a 1-year to 4-year cycle, which is known as a macrocycle. For example, a football player will train based on a 1-year cycle, from June to May, aiming to peak for a weekly or bi-weekly match, whereas an Olympic athlete will have a 4-year macrocycle, aiming for peak performance to coincide with the Olympic games.

## Mesocycle

The macrocycle is divided into a number of mesocycles. These normally consist of a medium-term process of 4–24 weeks. The mesocycle is the main method of controlling the work to rest ratios; for example if you had a work to rest ratio of 3:1, this means you would have three working weeks followed by one active rest week. If you are an inexperienced trainer, you would have a ratio of 2:1 but if you are an advanced trainer, you could have a ratio of up to 6:1. Mesocycles can be step loaded. This technique uses a repetitive work to rest ratio; for example, with a 4-week mesocycle, you could have a ratio of 3:1 and repeat this cycle three times but increasing the intensity of the work weeks at the start of each cycle.

## Microcycle

Each mesocycle is divided into a number of microcycles. The microcycle is planned with a specific adaptation in mind and should show the details of FITT training. Microcycles typically last for one week, but can range from 5–10 days.

A typical periodised training programme would look like the one in Table 9.4 (opposite).

## Individual training sessions

Each microcycle consists of a number of individual training sessions. A training session should include three basic components: the warm-up, the main workout and the cool down.

## Tedium/variation

One of the biggest reasons for stopping a training programme is if it becomes tedious (boring). This is often caused by following the same style of training on a regular basis. This principle is also known as the principle of variation because, to avoid tedium, you need to vary the training methods used in the programme.

## Individual differences

All individuals have different needs, abilities, goals, skills, physical attributes, lifestyles, medical history and exercise preferences. Therefore a training programme should be tailor-made for each individual. Your expectations should be specific to different individuals. Athletes with low levels of fitness will show greater improvement than elite athletes because they have scope for larger amounts of improvement. However, even though elite athletes will show a minimal improvement, it could prove significant. For example, if you have never trained before, you could improve your 1 repetition max by 60 kg after a long period of resistance training. An Olympic weightlifter, however, might increase their personal best by only 1 kg during the same time frame, but this could mean breaking the world record.

## FITT

In addition to the SPORTI principles, you also need to consider the FITT (frequency, intensity, time and type) principles (refer back to page 242).

## 3.3 Periodisation

Most people in sport use a training programme based on a structured cycle. This is known as periodisation. The training cycle is split into:

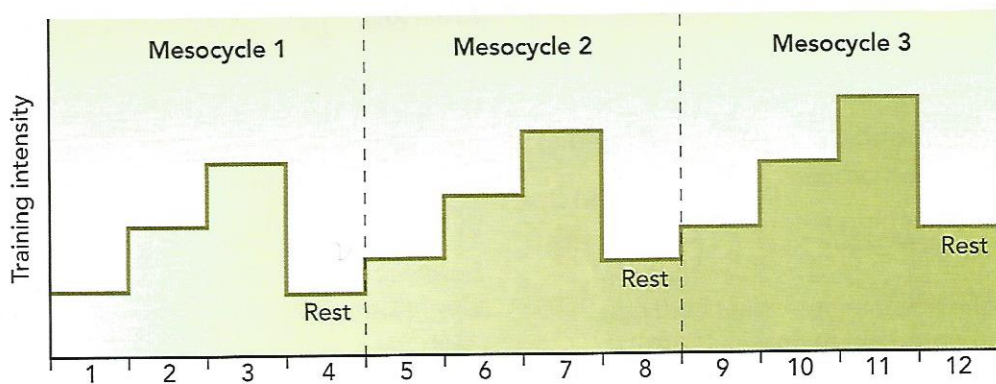


Figure 9.6: Why do you think that step loading mesocycles can improve fitness?

Macrocycle											
Mesocycle 1				Mesocycle 2				Mesocycle 3			
Microcycle 1	Microcycle 2	Microcycle 3	Microcycle 4	Microcycle 1	Microcycle 2	Microcycle 3	Microcycle 4	Microcycle 1	Microcycle 2	Microcycle 3	Microcycle 4
work	work	work	rest	work	work	work	rest	work	work	work	rest

Table 9.4: A typical periodised training programme. What level of athlete do you think that this structure of programme would be suitable for and why?

**The warm-up** is performed before the main exercise period to prepare you for the main session and to ensure your health and safety. A warm-up is required to:

- lubricate the joints with synovial fluid
- increase the temperature of the body generally, but specifically muscles and connective tissues
- increase blood flow
- take muscles and connective tissues through the full range of movement
- prepare you psychologically for the activity, focusing attention and increasing arousal.

A warm-up consists of: mobility exercises for joints; aerobic activity to increase body temperature and raise the pulse; preparatory stretches for the muscles and groups used in the main session; specific rehearsal activities that mimic the main session content.

**The main session** – the content of the main session is dependent on the session aims. However, make sure that your session is designed to meet your individual needs and ensure health, safety and welfare.

**The cool down** is shorter than the warm-up and is

based on low-intensity exercises. The main aim of the cool down is to return the body to its resting state, and the main focus is on the aerobic component. Reasons why the athlete should perform a cool down include:

- to remove waste products from the working muscles, which are still receiving the oxygenated blood
- to stretch in order to decrease the chance of muscle stiffness
- to reduce the chances of fainting after an intense session.

### 3.4 Training diary

When working with athletes, maintain a training diary on a regular basis. The need to keep records of the training programme is often overlooked in the fitness industry, possibly because it is time-consuming.

However, it is important for:

- **health and safety** – records can increase a trainer's awareness of previous injuries or illnesses
- **progression** – records allow the fitness trainer to see whether there is progression in the programme

- **communication** – records allow the trainer to gain an understanding of the athlete's history, which should aid communication
- **evaluation** – the information stored can be used as a part of the evaluation process
- **professionalism** – keeping records shows the fitness trainer has a level of competence and is following good practice
- reviewing your training programme.

## Date and details of the session

Keeping the dates and details of the different training sessions helps you organise your time and monitor your progression more effectively, and allows you to alter future plans when necessary.

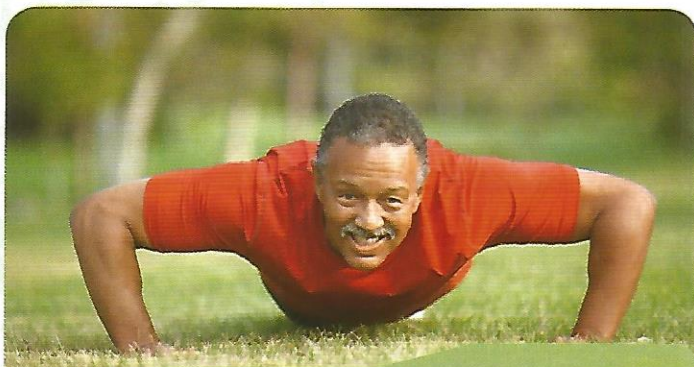
## Progression

Progress should be logged so that you can monitor the programme regularly. You may make comments on the following:

- How did you find the intensity?
- Could you have performed more repetitions or sets?
- What were your thoughts on the types of exercises you were performing?
- Do you feel you have progressed from the previous session?
- Any other relevant thoughts.

## Attitude

A major part of a training session is based on your attitude or approach to training. You should use the diary to make comments on your attitude so that you can explain the reason for good or poor sessions. To gain a wider picture, the fitness trainer should make comments on the attitude shown.



Why do you think having the correct attitude is important for training benefits?

## Motivation

Motivation is the most important ingredient for success when carrying out a training programme. An athlete needs to be motivated in the sessions to maximise training effects. The motivation of an athlete may decrease due to:

- lack of improvement in fitness
- boredom due to repetitive exercise
- poor sporting performances
- external pressures, for example, college work.

## Links to goals

Within the diary try to comment on your goal, which you identified at the start of the programme. Consider the following questions:

- How close are you to your goals?
- Are the goals still SMART targets?
- Do the goals need to be revised?
- Is the training too focused on one particular goal?

## Competition results

For athletes at all levels, keeping competition results as part of the training diary is an important part of monitoring progress. It has a number of benefits:

- **Motivation:** if you can see improvements then you are more likely to want to experience more success. Alternatively, if you aren't seeing improvements it is more likely to motivate you to review your training to see if it is as effective as it could be.
- **Progression:** if you are seeing an improvement in performance results, this can act as a catalyst for progression in your training programme as the only way to keep improvements going is to keep progressing your training in the correct way.

### PLTS

If you generate ideas and explore possibilities for your training programme, you could provide evidence of your **creative thinker** skills (see Assessment activity 9.3 on page 255).



### Functional skills

If you present your information in an appropriate manner, you could provide evidence of your **ICT** skills (see Assessment activity 9.3 on page 255).

