



National Unit Specification

General information

Unit title: Cardiovascular Training (SCQF level 6)

Unit code: J9GV 46

Superclass: MA

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Version: 01

Unit purpose

This unit gives an opportunity for learners to gain an understanding of the physiological and psychological responses to Cardiovascular (CV) training and plan, lead and evaluate a CV training session.

Learners will experience participating in and leading others in a range of CV training methods in a realistic, supportive environment using fartlek, continuous and interval training. It will allow learners to develop their personal leadership qualities, knowledge, and skills in the delivery of CV training sessions.

The unit is a part of the National Progression Award (NPA) in Exercise and Fitness Leadership at SCQF level 6. Learners could progress from this NPA award to:

- National Certificate in Sport and Physical Activity at SCQF level 6
- Higher National Certificate (HNC) Fitness, Health and Exercise or HNC Physical Activity and Health at SCQF level 7
- Higher National Certificate Sports Coaching and Development SCQF level 7
- Higher National Certificate Soft Tissue Therapy SCQF level 7

Further knowledge, skills, experience or qualifications may be required prior to entry to Higher National (HN) qualifications.

Outcomes

On successful completion of the unit the learner will be able to:

1. Describe the short- and long-term physiological and psychological responses to CV training.
2. Participate in a range of CV training sessions and plan one CV training session for healthy client(s).
3. Lead a CV training session for healthy client(s).
4. Evaluate the planning and delivery of the CV training session.

Credit points and level

1 National Unit credit at Scottish Credit and Qualifications Framework (SCQF) level 6: (6 SCQF credit points at SCQF level 6).

Recommended entry to the unit

Entry for this unit would be at the discretion of the centre however learners would benefit from having some experience participating in and leading in physical education, physical activity, sport, and/or exercise and fitness training sessions and have communication skills equivalent to at least SCQF level 5.

Learners may also have experience in leading others during sports coaching.

This unit is suitable for those who have no previous qualifications or experience.

Core Skills

Opportunities to develop aspects of Core Skills are highlighted in the support notes for this unit specification.

There is no automatic certification of Core Skills or Core Skill components in this unit.

Context for delivery

If this unit is delivered as part of a group award, it is recommended that it should be taught and assessed within the subject area of the group award to which it contributes.

The Assessment Support Pack (ASP) for this unit provides assessment and marking guidelines that exemplify the national standard for achievement. It is a valid, reliable and practicable assessment. Centres wishing to develop their own assessments should refer to the ASP to ensure a comparable standard. A list of existing ASPs is available to download from SQA's website: [Internal Assessment Support Materials](http://www.sqa.org.uk/internal-assessment-support-materials) (www.sqa.org.uk/internal-assessment-support-materials).

Equality and inclusion

This unit specification has been designed to ensure that there are no unnecessary barriers to learning or assessment. The individual needs of learners should be taken into account when planning learning experiences, selecting assessment methods or considering alternative evidence.

Further advice can be found on our website:

[SQA Assessment Arrangements](http://www.sqa.org.uk/assessmentarrangements) (www.sqa.org.uk/assessmentarrangements).

National Unit Specification: Statement of standards

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Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the unit specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

Outcome 1

Describe the short- and long-term physiological and psychological responses to CV training.

Performance criteria

- (a) Describe short-term physiological effects of CV training on the cardiac system.
- (b) Describe long-term physiological effects of CV training on the cardiac system.
- (c) Describe short-term physiological effects of CV training on the respiratory system.
- (d) Describe long-term physiological effects of CV training on the respiratory system.
- (e) Describe the psychological benefits of CV training.

Outcome 2

Participate in a range of CV training sessions and plan one CV training session for healthy client(s).

Performance criteria

- (a) Participate in a range of CV training sessions.
- (b) Select an appropriate method to monitor heart rate (HR) training zones for one CV training session.
- (c) Carry out a health and safety risk assessment for the planned CV training session.
- (d) Plan a warm-up for a CV training session.

- (e) Plan a CV training session.
- (f) Plan a cool-down for a CV training session.

Outcome 3

Lead a CV training session for healthy client(s).

Performance criteria

- (a) Set up the planned CV training session safely and apply appropriate health and safety protocols.
- (b) Explain the purpose of the training session to client(s).
- (c) Lead the planned warm-up for the CV training session.
- (d) Lead the planned CV training session.
- (e) Lead the planned cooldown for the CV training session.

Outcome 4

Evaluate the planning and delivery of the CV training session.

Performance criteria

- (a) Evaluate the planning and delivery of the CV training session.
- (b) Evaluate participants feedback on the CV training session delivered.
- (c) Prioritise development needs for the effective delivery of future sessions for the specific type of training.

Evidence requirements for this unit

Evidence is required to demonstrate that learners have achieved all outcomes and performance criteria.

Outcome 1: Describe the short- and long-term physiological and psychological responses to CV training.

Outcome 1 must be a closed-book assessment completed within 1 hour, in one sitting under controlled, supervised conditions.

Learners must describe:

- a minimum of two short-term physiological effects of CV training on the cardiac system
- a minimum of two long-term physiological effects of CV training on the cardiac system
- a minimum of two short-term physiological effects of CV training on the respiratory system
- a minimum of two long-term physiological effects of CV training on the respiratory system
- a minimum of two psychological benefits of CV training

Outcome 2: Participate in a range of CV training sessions and plan one CV training session for healthy client(s).

The evidence for performance criterion (a) should be gathered under supervised conditions and performance criteria (b), (c), (d) (e) and (f) under open-book assessment conditions.

- (a) Learners must participate in minimum of one fartlek, one continuous, and one interval training session. Each session must also include a structured warm-up and cool-down. Learners must keep a record of the sessions they have completed. This record must include what exercises they completed, intervals/timings, rest time taken, overall session time and equipment used.

For performance criteria (b), (c), (d), (e) and (f), learners must plan for a group with a minimum of four clients **or** for one client.

- (b) Learners must calculate training zones and select an appropriate method which is appropriate to monitor the working HR of the client(s) for one of the following:
- fartlek training
 - continuous training
 - interval training
- (c) Learners must complete a health and safety risk assessment for the planned warm up, CV training session selected in (b) and cool-down. The health and safety risk assessment must include pre-screening for client(s) of their previous injuries and/or illnesses and goals using a Physical Activity Readiness Questionnaire (PAR-Q). Learners must also ensure that their client(s) have the appropriate attire for the session. Learners must also carry out a visual inspection of the area and any equipment to be used.
- (d) Learners must plan an appropriate warm-up for their client(s) for the CV training session selected in (b). This must last for a minimum of 3 minutes. The warm-up must be a general pulse raising activity which includes a minimum of two dynamic stretches. This must be recorded on the session plan.
- (e) Learners must plan one structured CV training session based on their client(s) goals.

The session plan must include:

- what type of CV training session they will deliver
- details of requisite HR training zones for client(s)
- the duration which must last a minimum of 15 minutes
- the timings and location
- the number of clients
- the client(s) previous experience in CV training
- the equipment required for the session
- adaptations and progressions

- (f) Learners must plan an appropriate cool-down activity for the client(s) relating to the muscle groups that were used throughout the session for a minimum of 3 minutes. This must gradually decrease the pulse rate which must be followed with a minimum of two static stretches. This must be recorded on a session plan.

Outcome 3: Lead a CV training session for healthy client(s).

Outcome 3 must be assessed using an assessor checklist under supervised conditions.

- (a) Learners must set up equipment safely, including visual inspection of all equipment, for warm-up, training session and cool-down and apply appropriate health and safety protocols when leading a CV training session.
- (b) Learners must explain the purpose of the planned CV training session to client(s), including an accurate demonstration of what the client(s) are going to do during the session as well as any planned adaptations and progressions.
- (c) Learners must lead a relevant warm-up that lasts a minimum of 3 minutes that prepares the client(s) for the training session. Learners must start off with low intensity movements to gradually increase HR. The warm-up must then further increase in intensity and include a minimum of two dynamic stretches to ensure the whole body is warm and prepared for the session.
- (d) Learners must lead the session for a minimum of 15 minutes. Throughout the session learners must continually monitor client(s) performance and motivate, provide accurate feedback, along with adaptations and progressions when required.
- (e) Learners must lead their client(s) through an appropriate cool-down that lasts for a minimum of 3 minutes. This cool-down must be a general pulse lowering activity which includes a minimum of two static stretches.

Outcome 4: Evaluate the planning and delivery of the CV training session.

The evidence for this outcome should be gathered under open-book assessment conditions.

(a) Learners must evaluate the planning and delivery of the warmup, CV training session and cool-down they led.

The evaluation must identify:

- a minimum of one strength and one development need in relation to the planning of the session and one explanation of how this affected the outcome of their session.
- a minimum of one strength and one development need in relation to the delivery of the session and one explanation of how this affected the outcome of their session.

(b) Learners must gather feedback from their client(s) to evaluate the effectiveness of the set-up and delivery of the session delivered.

(c) Learners must record a minimum of two development needs to prioritise for the effective delivery of future sessions.

Holistic assessment

There may be opportunities to cross assess outcome 2 performance criterion (c) with the J9GW 46 Group Exercise Training unit outcome 2 performance criterion (b) and the J9GX 46 Resistance Training unit outcome 2 performance criterion (b).



National Unit Support Notes

Unit title: Cardiovascular Training (SCQF level 6)

Unit support notes are offered as guidance and are not mandatory.

While the exact time allocated to this unit is at the discretion of the centre, the notional design length is 40 hours.

Guidance on the content and context for this unit

The purpose of this unit is to enable learners to develop skills in being able to lead others in CV training sessions in a realistic, supported environment. It will give learners some fundamental knowledge and practical skills required within careers in the fitness, health and exercise industry.

Unit delivery should be in a practical environment as much as possible. Centres will form their own judgement as to the delivery schedule. It is recommended that centres decide what best suits the needs of the learner and their own and local facilities.

Some aspects of the unit may require delivery to take place in a 'classroom' environment while others will require learners to be working out with that environment (that is, games hall, gym, fitness studio) while receiving teacher/lecturer support.

Centres are encouraged to create links with local gyms to allow learners the opportunity to experience a realistic health and fitness industry environment.

Outcome 1: Describe the short- and long-term physiological and psychological responses to CV training.

(a) When describing the short-term physiological effects of CV training on the cardiac system learners could include:

- increased heart rate contractions become more forceful
- each beat of the heart pumps more blood around the body
- recovery to resting heart rate times reduce following bouts of exercise

This list is not exhaustive.

(b) When describing the long-term physiological effects of CV training on the cardiac system learners could include:

- improved heart efficiency reduced blood pressure
- decreased mortality rate
- improved health and quality of life

This list is not exhaustive.

(c) When describing the short-term physiological effects of CV training on the respiratory system learners could include:

- increased breathing rate
- increased tidal volume
- increased stroke volume
- blood pressure rises to cope with increased demand for oxygen for the working muscles

This list is not exhaustive.

(d) When describing the long-term physiological effects of CV training on the respiratory system learners could include:

- aerobic activities completed with greater ease
- improved resistance to upper respiratory tract infections
- increased strength of respiratory muscles
- breathing mechanism is more effective

This list is not exhaustive.

(e) When describing the psychological benefits of CV training learners could include:

- improved self-esteem and confidence
- improved mood and sense of wellbeing
- improved mental health by reducing anxiety and depression
- improved concentration

This list is not exhaustive.

Outcome 2: Participate in a range of CV training sessions and plan one CV training session for healthy client(s).

Through participation learners will develop an understanding of how to develop CV endurance. This will allow learners to experience the safe practical organisation and delivery of different types of CV training sessions. This knowledge can then be applied to their planning a CV training session of their choice and support their ability to lead a CV training session in outcome 3.

It may be appropriate to set up a variety of health and safety scenarios so that learners are aware of the required health and safety protocols for a safe working environment.

Outcome 3: Lead a CV training session for healthy client(s).

It is anticipated that learners will devise a CV training session of their choice appropriate to the client(s). The environment and equipment should be appropriate for the chosen type of training.

Outcome 4: Evaluate the planning and delivery of the CV training session.

Learners could complete a written/oral self-reflection task about the planning and delivery of the CV training session and how it affected the outcome of the session. Learners could judge the effectiveness of the session, through observing client(s) effort/application, work rate and body language along with feedback from client(s). Learners could use this information to evaluate their planning and delivery to prioritise areas for development.

The accuracy of the learner's self-reflection/evaluation should be confirmed by the teacher/assessor.

Gaining feedback from a range of sources (peers, participant, teacher, lecturer, assessor and coaches) would be beneficial to build a more rounded evaluation.

Guidance on approaches to delivery of this unit

Each outcome should build the knowledge, understanding and confidence of learners, therefore it will work well to deliver this unit in sequential order, however, it is at the centres discretion which order they deliver these outcomes. An element of flexibility and creativity with the planning and delivery may allow for a better learning experience. Some examples below:

Outcome 1: Describe the short- and long-term physiological and psychological responses to CV training.

Experiential learning activities can consolidate the knowledge related to the short- and long-term physiological and psychological responses to CV training sessions.

Alternatively, this could be taught in a classroom environment with the use of PowerPoint presentations and additional resources. To support learning, learners may be directed to online resources.

Group tasks could be set up to discuss the physiological effects of CV training immediately after participating in a training session. This could cover what the learner experiences in relation to heart rate and breathing rate while the training is being carried out. This could also cover the changes to mood state, alertness or concentration on the completion of training sessions and satisfy outcome 2 performance criterion (a) as well as the knowledge required for the performance criteria within outcome 1.

Outcome 2: Participate in a range of CV training sessions and plan one CV training session for healthy client(s).

Learners should be exposed to a range of teacher/lecturer led warm-ups, CV training sessions and cool-downs which will develop CV endurance. This experience will enable learners to apply knowledge and skills, and plan a CV training session for their client(s) incorporating information from the PAR-Q (for example client(s) goals, medical information).

When delivering CV sessions teachers/lecturers should exemplify the importance of ongoing communication and motivation where appropriate to enable the learner to understand the benefits of supporting their client(s) during session delivery.

Learners should participate in a minimum of one fartlek training session, one continuous training session, and one interval training session. This should include exposure to different environments:

- Indoor — fitness suite, games hall, swimming pool, velodrome
- Outdoor — running track, cycling trail, walking routes with different terrains

This list is not exhaustive.

Teacher/lecturers could set up practical groups to calculate training zones for a range of different age groups and to then discuss with the wider group which will equip the learner with an appreciation of range of intensities a participant could be working within.

Selecting appropriate methods to monitor HR and training zones will also be part of the learner's experience. Understanding the need to monitor work rate and experiencing first hand, the benefits of using different monitoring methods will ensure learners are able to select the most appropriate subjective and objective methods to use when planning their training session for delivery in outcome 3.

It is recommended learners are exposed to the following methods:

- smart watch
- fingers

- heart rate monitor
- activity tracker vest
- perceived rate of exertion

This list is not exhaustive

Outcome 3: Lead a CV training session for healthy client(s).

Teacher/lecturers could set up groups of learners to be the 'healthy client(s)' for each other. This would help to develop their practical delivery, improving confidence and training specific knowledge by being a participant in the practical sessions. Sessions could be split into warm-up, main session and cool-down where a group of learners would plan together a coherent session and agree to deliver a part of the session and then to feedback and evaluate the delivery of the session together.

Outcome 4: Evaluate the planning and delivery of the CV training session.

Teachers/lecturers should encourage learners to effectively evaluate their participation in the range of CV training sessions completed in outcome 2. This would enable learners to embed good practice within their own delivery of their planned CV training session.

This could also involve encouraging feedback from learners on the teacher/lecturer led sessions.

Guidance on approaches to assessment of this unit

Evidence can be generated using different types of assessment. The following are suggestions only. There may be other methods that would be more suitable to learners.

Centres are reminded that prior verification of centre-devised assessments would help to ensure that the national standard is being met. Where learners experience a range of assessment methods, this helps them to develop different skills that should be transferable to work or further and higher education.

Assessors must follow SQA guidelines in relation to internal verification and external verification in order to ensure that all evidence is collected, moderated, and quality assured in a valid, accurate, and secure manner so that it maintains the integrity of SQA expectations.

Evidence for outcome 1 to outcome 4 may be obtained utilising formative and summative assessment methods or as part of a holistic assessment approach as determined by assessors.

Outcome 1: Describe the short- and long-term physiological and psychological responses to CV training.

The one hour closed-book assessment could be short answer questions set by the teacher/lecturer which could be responded to in either a written or oral format. Oral recordings could be captured via video or voice recording apps which should be supported by an assessor checklist.

Outcome 2: Participate in a range of CV training sessions and plan one CV training session for healthy client(s).

As stated in the evidence requirements a session plan template must be used for performance criteria (d), (e) and (f).

Learners could be assessed by the use of a logbook (performance criteria (a) and (b)) and risk assessment template (performance criterion (c)) which could be written or digital.

Outcome 3: Lead a CV training session for healthy client(s).

Through the use of an assessor observation checklist the teacher/lecturer should provide qualitative comments about the learner's delivery.

Outcome 4: Evaluate the planning and delivery of the CV training session.

This outcome could be assessed via a variety of different approaches including:

- Professional discussion
- Portfolio

For remediation of assessment, please refer to the group award specification.

Authentication of evidence

All written work should contain a declaration of validity that the content is the learners own work unless cited otherwise. Submissions should be signed off and dated by the learner. Digital submissions should be encouraged through centres' learning management system (LMS) platforms using anti plagiarism software.

Opportunities for e-assessment

E-assessment may be appropriate for some assessments in this unit. By e-assessment we mean assessment which is supported by Information and Communication Technology (ICT), such as e-testing or the use of e-portfolios or social software. Centres which wish to use e-assessment must ensure that the national standard is applied to all learner evidence and that conditions of assessment as specified in the evidence requirements are met, regardless of the mode of gathering evidence. The most up-to-date guidance on the use of e-assessment to support SQA's qualifications is available at [SQA e-Assessment](http://www.sqa.org.uk/Guide%20to%20best%20practice.pdf). (www.sqa.org.uk/Guide to best practice.pdf).

Opportunities for developing Core and other essential skills

Core Skills can be developed throughout this unit. For example, Communication skills can be developed when explaining session purpose, describing a training session, or giving motivational or technique feedback to client(s).

Numeracy skills will be required during the collection of HR data, and so there will be the opportunity to develop numeracy skills and feel comfortable with numbers when working with aerobic zones and determining if a client is training successfully. Specifically, this will involve calculating maximum heart rates and then finding the appropriate percentage lower and upper thresholds for effective training.

Information and Communication Technology (ICT) skills will be utilised when accessing or providing information on training completed and recording future

targets. Working with Others can be developed in this unit when participating in sessions and also through delivery of the planned training session.

Problem Solving skills can be developed through tackling issues and problems in personal, social, vocational, and occupational contexts.

From a broader perspective a learner may develop a sense of enterprise, employability, sustainable development, and citizenship as they engage with the unit. For example, working towards becoming a fitness instructor and starting their own business, developing meta skills useful for employability, learning how to ensure sustainability is linked with such careers, and becoming a good citizen who values and supports the health and wellbeing of client(s).

General information for learners

Unit title: Cardiovascular Training (SCQF level 6)

This information will help you decide whether this is the unit for you by explaining what the unit is about, what you should know or be able to do before you start, what you will need to do during the unit and opportunities for further learning and employment.

This unit is designed to be delivered as a standalone unit or in conjunction with the following units to make up the SCQF level 6 National Progression Award in Exercise and Fitness Leadership:

- J9GW 46 Group Exercise Training
- J9GX 46 Resistance Training

You will benefit from undertaking this unit if you already have an interest in exercise and fitness and are keen to increase your understanding of CV training. You do not need any previous qualifications or experience to study this unit.

You will learn about the short- and long-term physiological effects of CV training on the cardiac and respiratory systems and the psychological benefits of this type of training. This will be assessed by a written or oral closed-book assessment.

You will participate in a range of teacher/lecturer led CV training sessions (fartlek, interval and continuous), which include appropriate warm-ups and cool-downs, developing your knowledge and understanding of how CV can be improved. You will be required to complete a record which details what you did during every session you participated in. Through participation in a range of CV sessions you will develop an understanding of how to develop CV endurance. This will allow you to experience the safe, practical organisation and delivery of different types of CV training sessions which can then be applied to your planning of a CV training session of your choice and support you to lead a CV training session. Your planning will include calculating training zones and the use of heart rate monitors to monitor working heart rate. This will be assessed using a session plan template.

Prior to delivering your session you will carry out a health and safety risk assessment, including pre-screening for client(s) previous injuries or illnesses, their goals and checks to ensure proper attire is being worn for the session. You will also conduct a visual inspection of the area and equipment to be used.

When leading the session, you will be able to explain the purpose of the training session to client(s) including demonstration of exercises to be used, then lead the session as planned and evaluate client(s) performance during the session in a supportive environment that is realistic to the fitness industry. You will motivate client(s), with ongoing communication where appropriate and practicable so that client(s) can successfully complete the session at an appropriate level. This will be assessed by an assessor checklist.

This unit will provide opportunities for you to evaluate the planning and delivery of the CV training session you delivered. You will identify areas of strength and areas of development in the planning and delivery of the CV training session using self-reflection and client(s) feedback to prioritise your development needs.

There are opportunities to develop Core Skills throughout this unit. You will develop communication skills when planning and delivering your session. You will develop numeracy skills when calculating HR training zones and organising timings for sessions, and ICT skills when utilising technology to monitor HR and to time parts of the session. Working with others may also be developed through participation in CV training sessions. Problem solving will be developed when considering adaptations to the session being delivered.

Completion of this unit may allow progression in further education.