Synoptic connections

NCFE Active IQ Level 1/2 Technical Award in Health and Fitness
QN: 603/7007/5

Synoptic connections

Synoptic assessment requires learners to combine elements of their learning and show accumulated knowledge and understanding across the qualification content. It enables learners to evidence their capability to integrate and apply knowledge, understanding and skills gained with breadth and depth in context.

It is therefore essential when planning for teaching and throughout delivery that the interdependencies and links build across the content of the qualification and are highlighted and reinforced.

The qualification comprises 8 mandatory content areas. All content is mandatory and must be taught.

The teaching content does not have to be delivered in a linear way; content areas are interdependent in knowledge, skills and concepts.

Teachers may take a synoptic approach across the qualification. This will enable learners to be able to apply theories and concepts from across the qualification specification in context to skills-based situations. Through combining content and developing holistic connections, learners will be able to demonstrate and evidence their full knowledge and understanding of the subject area and health and fitness sector.

Learners will have the opportunity to identify relevant study skills and reflect upon their preferred learning style throughout the qualification.

Content area 1: Structure and function of body systems

Content area 1.1: Skeletal system

An understanding of the structure of the skeletal system will help the learners to know how the bones and joints function and how they affect movement in health and fitness activities. They will also be able to apply this knowledge when learning about the other functions of the human body and be able to associate the bone structure with muscle groups and how bones work to protect the respiratory and circulatory systems and other vital organs. Being able to consider the functions of bones and joints will assist them in knowing what happens when bones, other structures and systems work together.

Content areas that link synoptically up to 1.1:

- 1.2 – this section provides the learners with a deeper understanding of specific muscles, which stabilise and support the movement of skeletal joints

Content area 1.2: Muscular system

An understanding of the muscular system will help the learners to know where to locate the various muscle groups and how the muscles contribute to the external and internal movements of the human body, whilst contributing to joint stability. They will also be able to apply this knowledge when learning about respiratory and circulatory systems by recognising how muscles work to activate certain internal organs. Knowing the muscular system will assist them in their understanding of the structures of the muscles and how the different muscle fibre types are suited to different types of health and fitness activities.

Content areas that link synoptically up to 1.2:

- 1.1 – the learners will gain a deeper understanding of both the skeletal and the muscular systems by understanding how specific muscles support the movement of skeletal joints
- 1.3 – this section will help the learners to understand how muscles support the respiratory system with inhalation and exhalation
- 1.4 – the learners will be provided with a deeper understanding of how muscles of the heart support the functions of the cardiovascular system
- 1.5 – this section will provide the learners with a deeper understanding of the 2 types of muscle fibre, each of which are suited to either aerobic or anaerobic exercise
- 2.1 – this section provides the learners with a deeper understanding of the long and short-term effects that health and fitness training can have on the muscles
- 3.2 – this section details the components of health and fitness including the importance of muscular strength and endurance
- 4.1 – in this section the learners will understand the structure of the muscular system, muscular movement and contraction and types of muscle fibre, all of which are relevant to the principles of training and overload
- 5.1 – this section provides the learners with a deeper understanding of how to test muscular strength and muscular endurance
- 5.2 – this section provides the learners with various training methods, which can improve muscular strength and endurance

Content area 1.3: Respiratory system

Knowledge of the respiratory system will help the learners to understand the pathway of air through the system and how to identify the principal structures. They will also be able to understand the mechanics of inhalation and exhalation and the principals of diffusion and gaseous exchange. Being able to understand these functions will assist them in interpreting spirometer traces as well as the respiratory changes that happen from rest to active participation in health and fitness activities.

Content areas that link synoptically up to 1.3:

- 1.2 – this section will provide the learners with an understanding of the type of muscle used to inflate the lungs
- 1.5 – learners will gain a deeper understanding of the body's energy systems and their dependency, or non-dependency on oxygen
- 2.1 – this section will provide the learners with the short and long-term effects that health and fitness can have on the respiratory system
- 5.1, 5.3 – the learners will understand the functions of the respiratory system, respiratory measurements and the respiratory changes that happen from rest to participating in a health and fitness activity
- 6.1 – this section will provide the learners with a deeper understanding of how activity levels and life choices can impact the respiratory system
- 7.1 – the learners will understand the functions of the respiratory system, respiratory measurements and the respiratory changes that happen from rest to participating and relevance to health and fitness analysis

Content area 1.4: Cardiovascular system

An understanding of the cardiovascular system will help the learners to know how the structure of blood vessels relates to the functions of blood distribution around the body and the greater demand from the muscles during health and fitness activities. They will also be able to recognise the various structures of the heart and the cardiac cycle. Being able to consider the association between these aspects of the cardiovascular system will assist them in understanding cardiovascular measurements and how to apply these measurements in practice. The learners will also understand the 2 different types of blood pressure, the ranges of blood pressure classification and factors which can affect blood pressure.

Content areas that link synoptically up to 1.4:

- 1.2 – this section will provide the learners with an understanding of how muscle function can affect the cardiovascular system
- 2.1 – the learners will gain an understanding of the long and short-term effects that health and fitness activities can have on the cardiovascular system
- 3.2 – this section provides an understanding of the 5 components of health-related fitness, detailing cardiovascular endurance as one of the main components
- 5.1 – learners will understand fitness tests to assess cardiovascular endurance and will gain a deeper understanding of the cardiovascular system
- 5.2 – this section provides the learners with various training methods, some of which specifically improve cardiovascular fitness and endurance
- 5.3 – the learners will understand the cardiovascular system, cardiovascular measurements and their relevance to heart rate training zones
- 6.1 – the learners will be able to reflect on activity levels and lifestyle choices and their effects on the cardiovascular system

- 7.1 – the learners will understand cardiovascular measurements and their relevance to health and fitness analysis

Content area 1.5: Energy systems

An understanding of energy systems will help the learners to differentiate between the 2 types of energy that the body can produce: anaerobic and aerobic. They will be able to apply this knowledge to health and fitness activities to ensure the energy system being produced is appropriate to the requirements of the activity. Being able to consider the energy systems will assist them in preparing an exercise plan to meet the intensity required to achieve progression.

Content areas that link synoptically up to 1.5:

- 1.2 – this section will provide the learners with a deeper understanding of the 2 types of muscle fibre, each of which are suited to either aerobic or anaerobic exercise
- 1.3 – the learners will have a deeper understanding of the body's energy systems and their dependency or non-dependency on oxygen
- 4.1 – the learners will be provided with a deeper understanding of the anaerobic and aerobic energy systems, which can impact on training and overload
- 5.2 – the learners will understand the various training methods, which require either or both anaerobic and aerobic energy

Content area 2: Effects of health and fitness activities on the body

Content area 2.1: Effects of health and fitness activities on the body

An understanding of both long and short-term effects that health and fitness activities can have on the body will allow the learners to link these effects to specific health and safety activities. This knowledge will allow the learners an appreciation that the short-term effects on health and fitness are inevitable, with long-term effects being beneficial both to health and fitness. This knowledge will also allow the learners to inform and motivate others.

Content areas that link synoptically up to 2.1:

- 1.2 – the learners will understand the muscular system and will have a deeper understanding of the long and short-term effects that health and fitness training can have on the muscles
- 1.3 – the learners will have an understanding of the respiratory system and the short and long-term effects that health and fitness can have on the respiratory system
- 1.4 – the learners will have an understanding of the cardiovascular system and the long and short-term effects that health and fitness activities can have on the cardiovascular system
- 4.1 – this section will help the learners to understand the principles of sport and overload and the effects that these, when applied to a health and fitness activity, can have on the body
- 6.1 – this section will provide the learners with a deeper understanding of how activity levels and lifestyle choices can also affect the body during health and fitness activities
- 8.2 – this section will provide the learners with the knowledge that long and short-term effects of health and fitness on the body is a consideration when planning an exercise programme

Content area 3: Health and fitness and the components of fitness

Content area 3.1: Understanding health and fitness

An understanding of the definition of health and fitness will help the learners to recognise the relationship between them and that regular exercise can improve health by providing a state of complete wellbeing and a level of fitness, which allows the individual to meet the demands created within their environment.

Content areas that link synoptically up to 3.1:

- 6.1 – this section will provide the learners with a deeper understanding of activity levels, diet and lifestyle choices, which can impact on health and fitness

Content area 3.2: Components of fitness

The learners will have an understanding of the components of both health and skill-related fitness and they will be able to link these to health and fitness activities. They will also know that improvement of these components can lead to improved performances. Learners will be able to consider these components of health and skill-related fitness when developing a specific exercise plan to meet personal requirements or those of another.

Content areas that link synoptically up to 3.2:

- 1.2 – this section will assist the learners in understanding how muscular strength and endurance are main components of health and fitness
- 1.4 – the learners will understand the cardiovascular system, which will help in understanding the 5 components of health-related fitness, detailing cardiovascular endurance as one of the main components
- 4.1 – this section will help the learners to understand the intensity and frequency of training and how improvement of the component parts can lead to better performances
- 5.2 – the learners will understand various training methods and how they can improve the component parts of health and fitness

Content area 4: Principles of training
Content area 4.1: Principles of training The learners will understand both the principles of training and overload and how they can be applied to health and fitness activities to optimise performance, meeting the needs of the individual. Content areas that link synoptically up to 4.1: • 1.2 – the learners will be provided with the structure of the muscular system, muscular movement and contraction and types of muscle fibre all of which are relevant to the principles of training and overload • 1.5 – the learners will be provided with a deeper understanding of the anaerobic and aerobic energy systems, which can impact on training and overload • 2.1 – this section will provide the learners with an understanding of the long and short-term effects of health and fitness activities on the body • 3.2 – the learners will be able to understand the components of health and skill-related fitness • 5.2 – the learners will be able to apply the principles of training to the various training methods • 5.3 – this section will provide the learners with an understanding of heart training zones and how to apply repetitions and sets ranges • 8.2 – this will help the learners to understand how to plan a health and fitness programme around timescales and specific goals, incorporating the principles of training and overload

Content area 5: Testing and developing components of fitness

Content area 5.1: Fitness testing

The learners will understand the purpose and procedure for both health and skill-related fitness testing and how the data gathered from fitness tests can be used to develop health and fitness. Having developed an understanding of health and skill-related fitness tests and how to gather data, learners will be able to apply the most appropriate fitness test to provide the required data. Learners will be able to analyse this data and compare it with normative data or use it for comparison with future tests. Learners will know the importance of the validity and reliability in terms of the methods used to measure the data.

Content areas that link synoptically up to 5.1:

- 1.2 – the learners will understand the muscular system, which will deepen their understanding of how to test muscular strength and endurance
- 1.3 – the learners will understand the functions of the respiratory system, respiratory measurements and the respiratory changes that happen from rest to participating in a health and fitness activity
- 1.4 – the learners will understand the cardiovascular system and cardiovascular measurements and their relevance to fitness testing
- 6.1 – this section will provide the learners with a deeper understanding of lifestyle factors and activity levels which can influence fitness testing
- 7.1 – this section will provide the learners with a deeper understanding of fitness analysis and how lifestyle is a major consideration when assessing readiness to participate

Content area 5.2: Training methods

Having developed an understanding of various training methods and how they support different individual goals, learners will be able to create a specific health and fitness programme and a training schedule to suit the requirements of the individual.

Content areas that link synoptically up to 5.2:

- 1.2 – the learners will understand the 2 types of muscle fibre, each of which are suited to different training methods
- 1.4 – the learners will understand the cardiovascular system and be able to apply this when understanding various training methods that are designed to improve cardiovascular fitness and endurance
- 1.5 – this section will provide the learners with a deeper understanding of the aerobic and anaerobic energy systems suited to different training methods
- 3.2 – this section will provide the learners with the components of health and skill-related fitness
- 4.1 – this section provides the learners with an understanding of the principles of training and overload
- 7.1 – the learners will understand health and fitness analysis tools which will be the basis for a health and fitness programme and setting individual goals using the principles of SMART

Content area 5.3: Optimising a health and fitness programme

Having developed an understanding of heart rate training zones and repetition and sets range, the learners will know how to apply these in support of individual goals by the provision of an appropriate health and fitness programme.

Content areas that link synoptically up to 5.3:

- 1.3 – the learners will understand the functions of the respiratory system, respiratory measurements and the respiratory changes that happen from rest to participating in a health and fitness activity
- 1.4 – the learners will understand the cardiovascular system and cardiovascular measurements and their relevance to heart rate training zones
- 4.1 – this section provides the learners with an understanding of the principles of training and overload

Content area 6: Impact of lifestyle on health and fitness

Content area 6.1: Lifestyle factors

The learners will understand the terms 'active' and 'sedentary' lifestyles as outlined in current physical activity guidelines promoted by the NHS. The learners will know how to classify health and fitness activities in accordance with these guidelines into the categories 'moderate' or 'vigorous'. The learners will also understand how key nutrients relate to participation in health and fitness activities and how a balanced diet, rest and recovery contribute to a healthy and fit body. The learners will also know those lifestyle factors which have a negative effect on personal health and fitness, such as drugs, smoking, alcohol and stress.

Content areas that link synoptically up to 6.1:

- 1.3 – the learners will gain an insight into the respiratory system and understand the impact that lifestyle can have on the body in terms of breathing and lung capacity
- 1.4 – the learners will be provided with a deeper understanding of the cardiovascular system and the effects that lifestyle factors and activities can have on the system
- 2.1 – this will provide the learners with a comprehensive list of the short and long-term effects of health and fitness activity, which could be impacted by lifestyle
- 3.1 – the learners will be able to apply their understanding of the terms 'health' and 'fitness' to gain a deeper understanding of activity levels, diet and lifestyle choices, which can impact on health and fitness
- 5.1 – the learners' knowledge of lifestyle factors and activity levels will give them a deeper understanding of how these factors can influence fitness testing
- 7.1 – this will provide the learners with a deeper understanding of fitness analysis and how lifestyle factors and activities are a major consideration when assessing readiness to participate

Content area 7: Applying health and fitness analysis and setting goals
Content area 7.1: Health and fitness analysis and goal setting An understanding of health and fitness analysis tools, how to administer them in gathering appropriate data and goal setting, will enable the learners to set individual goals. The learners, having an understanding of the principles contained within the acronym SMART, will be able to set health and fitness goals within those parameters. Content areas that link synoptically up to 7.1: • 1.3 – the learners will understand the functions of the respiratory system, respiratory measurements and the respiratory changes that happen from rest to participating and relevance to health and fitness analysis • 1.4 – the learners will understand the cardiovascular system, cardiovascular measurements and their relevance to health and fitness analysis • 5.1 – the learners will gain a deeper understanding of fitness testing and how lifestyle is a major consideration when assessing readiness to participate • 5.2 – the learners will understand health and fitness analysis tools which will be the basis for a health and fitness programme that incorporates different training methods • 6.1 – this section will provide the learners with a deeper understanding of lifestyle factors and activity levels which can influence fitness testing and analysis • 8.2 – this section will help the learners to understand how to plan a health and fitness programme around timescales and specific goals, incorporating the principles of training and overload

Content area 8: Structure of a health and fitness programme **and how to prepare safely**

Content area 8.1: The structure of a health and fitness training programme

The learners will understand the information and all essential elements that should be included in a health and fitness training programme. This will enable the learners to conduct a health and safety risk assessment before any activity takes place and create a session plan which provides details of the phases of activities planned for the session to meet set goals or targets. The learners will understand how the principles of training and FITT are applied to an activity session, why different methods of training are included in the session and how they are linked to the components of fitness. The learners will understand the requirements of a post activity review to assess the effectiveness of the programme against the achievement of set goals, aims and objectives, including feedback from participants with a view to future improvements.

All information contained within sections 1–7 of this programme are synoptically connected to this area. In 8.1, learners can put into practice all they've learned in previous content areas.

Content area 8.2: Timescales and goal setting

The learners will understand how to plan a health and fitness programme, set within a suitable timescale against specific goals or targets. The learners will know the current health and readiness of the individual to participate, and their lifestyle choices before carrying out a detailed health and fitness assessment to establish baseline fitness levels for comparison. Based on the data gathered from these tests the learners will discuss the needs and goals of the individual in terms of timeframes, achievability, motivation and commitment to training. The learners will know that once this information has been obtained then the development of a health and fitness training plan can begin. The learners will take into consideration the key components, methods and principles of health and fitness training and schedule into the programme regular health and fitness assessments and training plan reviews.

Content areas that link synoptically up to 8.2:

- 2.1 – the learners will be able to apply the knowledge of the long and short term-effects of health and fitness on the body as a consideration when planning an exercise programme
- 4.1 – this section will help the learners to understand how to plan a health and fitness programme around timescales and specific goals, incorporating the principles of training and overload
- 7.1 – this section provides the learners with health and fitness analysis tools which will be the basis for a health and fitness programme and setting individual goals and timescales using the principles of SMART