

# Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science



## Specification

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*First teaching from September 2018*

*First certification from 2019*

Issue 3



# **Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science**

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First teaching September 2018

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### **Edexcel, BTEC and LCCI qualifications**

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### **About Pearson**

Pearson is the world's leading learning company, with 35,000 employees in more than 70 countries working to help people of all ages to make measurable progress in their lives through learning. We put the learner at the centre of everything we do, because wherever learning flourishes, so do people. Find out more about how we can help you and your learners at [qualifications.pearson.com](https://qualifications.pearson.com)

This specification is Issue 3. Key changes are sidelined. We will inform centres of any changes to this issue. The latest issue can be found on our website.

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# Welcome

With a track record built over 30 years of learner success, BTEC Nationals are widely recognised by industry and higher education as the signature vocational qualification at Level 3. They provide progression to the workplace either directly or via study at a higher level. Proof comes from YouGov research, which shows that 62 per cent of large companies have recruited employees with BTEC qualifications. What's more, well over 100,000 BTEC students apply to UK universities every year and their BTEC Nationals are accepted by over 150 UK universities and higher education institutes for relevant degree programmes either on their own or in combination with A Levels.

## Why are BTECs so successful?

BTECs embody a fundamentally learner-centred approach to the curriculum, with a flexible, unit-based structure and knowledge applied in project-based assessments. They focus on the holistic development of the practical, interpersonal and thinking skills required to be able to succeed in employment and higher education.

When creating the BTEC Nationals in this suite, we worked with many employers, higher education providers, colleges and schools to ensure that their needs are met. Employers are looking for recruits with a thorough grounding in the latest industry requirements and work-ready skills such as teamwork. Higher education needs students who have experience of research, extended writing and meeting deadlines.

We have addressed these requirements with:

- a range of BTEC sizes, each with a clear purpose, so there is something to suit each learner's choice of study programme and progression plans
- refreshed content that is closely aligned with employers' and higher education needs for a skilled future workforce
- assessments and projects chosen to help learners progress to the next stage. This means some are set by you to meet local needs, while others are set and marked by Pearson so that there is a core of skills and understanding that is common to all learners. For example, a written test can be used to check that learners are confident in using technical knowledge to carry out a certain job.

We provide a wealth of support, both resources and people, to ensure that learners and their teachers have the best possible experience during their course. See *Section 10* for details of the support we offer.

## A word to learners

Today's BTEC Nationals are demanding, as you would expect of the most respected applied learning qualification in the UK. You will have to choose and complete a range of units, be organised, take some assessments that we will set and mark and keep a portfolio of your assignments. But you can feel proud to achieve a BTEC because, whatever your plans in life – whether you decide to study further, go on to work or an Apprenticeship, or set up your own business – your BTEC National will be your passport to success in the next stage of your life.

Good luck, and we hope you enjoy your course.

## Collaborative development

Learners completing their BTEC Nationals in Sport and Exercise Science will be aiming to go on to employment, often via the stepping stone of higher education. It was, therefore, essential that we developed these qualifications in close collaboration with experts from professional bodies, businesses and universities, and with the providers who will be delivering the qualifications. To ensure that the content meets providers' needs and provides high-quality preparation for progression, we engaged experts. We are very grateful to all the university and further education lecturers, teachers, employers, professional body representatives and other individuals who have generously shared their time and expertise to help us develop these new qualifications. In addition, universities, professional bodies and businesses have provided letters of support confirming that these qualifications meet their entry requirements. These letters can be viewed on our website.

### Summary of Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science specification Issue 3 changes

Summary of changes made between the previous issue and this current issue	Page number
The wording in Section 7 <i>Teacher/centre malpractice</i> has been updated to clarify suspension of certification in certain circumstances.	Page 99
The wording under Section 9 <i>Understanding the qualification grade</i> has been updated to clarify current practice in ensuring maintenance and consistency of qualification standards.	Page 102

If you need further information on these changes or what they mean, contact us via our website at: [qualifications.pearson.com/en/support/contact-us.html](https://qualifications.pearson.com/en/support/contact-us.html).

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# Introduction to BTEC National qualifications for the sport and exercise science sector

This specification contains the information you need to deliver the Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science. The specification signposts you to additional handbooks and policies. It includes all the units for this qualification.

This qualification is part of the suite of Sport and Exercise Science qualifications offered by Pearson. In the suite there are qualifications that focus on different progression routes, allowing learners to choose the one best suited to their aspirations.

All qualifications in the suite share some common units and assessments, allowing learners some flexibility in moving between sizes. The qualification titles are given below.

Some BTEC National qualifications provide a broad introduction that gives learners transferable knowledge and skills. These qualifications are for post-16 learners who want to continue their education through applied learning. The qualifications prepare learners for a range of higher education courses and job roles related to a particular sector. They provide progression either by meeting entry requirements in their own right or by being accepted alongside other qualifications at the same level and adding value to them.

In the sport and exercise science sector these qualifications are:

Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science (603/0444/3)

Pearson BTEC Level 3 National Foundation Diploma in Sport and Exercise Science (603/0443/1)

Pearson BTEC Level 3 National Diploma in Sport and Exercise Science (601/7421/3)

Pearson BTEC Level 3 National Extended Diploma in Sport and Exercise Science (601/7422/5).

This specification signposts all the other essential documents and support that you need as a centre in order to deliver, assess and administer the qualification, including the staff development required. A summary of all essential documents is given in *Section 7*. Information on how we can support you with this qualification is given in *Section 10*.

The information in this specification is correct at the time of publication.

## Total Qualification Time

For all regulated qualifications, Pearson specifies a total number of hours that it is estimated learners will require to complete and show achievement for the qualification: this is the Total Qualification Time (TQT). Within TQT, Pearson identifies the number of Guided Learning Hours (GLH) that we estimate a centre delivering the qualification might provide. Guided learning means activities, such as lessons, tutorials, online instruction, supervised study and giving feedback on performance, that directly involve teachers and assessors in teaching, supervising and invigilating learners. Guided learning includes the time required for learners to complete external assessment under examination or supervised conditions.

In addition to guided learning, other required learning directed by teachers or assessors will include private study, preparation for assessment and undertaking assessment when not under supervision, such as preparatory reading, revision and independent research.

BTEC Nationals have been designed around the number of hours of guided learning expected. Each unit in the qualification has a GLH value of 60, 90 or 120. There is then a total GLH value for the qualification.

Each qualification has a TQT value. This may vary within sectors and across the suite, depending on the nature of the units in each qualification and the expected time for other required learning. The following table shows all the qualifications in this sector and their GLH and TQT values.

## Qualifications, sizes and purposes at a glance

Title	Size and structure	Summary purpose
<b>Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science</b>	360 GLH (480 TQT) Equivalent in size to one A Level. 4 units of which 3 are mandatory and 2 are external. Mandatory content (83%). External assessment (58%).	A broad basis of study for the sport and exercise science sector. Designed to support progression to higher education when taken as part of a programme of study that includes other appropriate BTEC Nationals or A Levels.
<b>Pearson BTEC Level 3 National Foundation Diploma in Sport and Exercise Science</b>	510 GLH (680 TQT) Equivalent in size to 1.5 A Levels. 6 units of which 4 are mandatory and 2 are external. Mandatory content (76%). External assessment (41%).	Designed as a one-year, full-time course covering the fundamentals in the sport and exercise science sector, supporting progression to an apprenticeship in the sports sector or to a further year of study at Level 3. It supports progression to higher education when taken as part of a programme of study that includes other BTEC Nationals or A Levels.
<b>Pearson BTEC Level 3 National Diploma in Sport and Exercise Science</b>	720 GLH (960 TQT) Equivalent in size to two A Levels. 8 units of which 6 are mandatory and 3 are external. Mandatory content (83%). External assessment (46%).	Taken alongside a further qualification related to their chosen field, e.g. A Level Biology, Mathematics or Psychology, or a BTEC Certificate in Business, this qualification is for learners who are intending to study towards a degree in the sport and exercise sector.
<b>Pearson BTEC Level 3 National Extended Diploma in Sport and Exercise Science</b>	1080 GLH (1420 TQT) Equivalent in size to three A Levels. 13 units of which 7 are mandatory and 4 are external. Mandatory content (67%). External assessment (42%).	This is the largest qualification in the suite of BTEC Nationals in Sport and Exercise Science and is equivalent in size to three A Levels. It is best suited to learners who want to progress to higher education programmes in the sport and exercise science sector.

## Structures of the qualifications at a glance

This table shows all the units and the qualifications to which they contribute. The full structure for this Pearson BTEC Level 3 National in Sport and Exercise Science is shown in *Section 2*. **You must refer to the full structure to select units and plan your programme.**

### Key

	Unit assessed externally	<b>M</b>	Mandatory units	<b>O</b>	Optional units
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Unit (number and title)	Unit size (GLH)	Extended Certificate (360 GLH)	Foundation Diploma (510 GLH)	Diploma (720 GLH)	Extended Diploma (1080 GLH)
1 Sport and Exercise Physiology	120			M	M
2 Functional Anatomy	90	M	M	M	M
3 Applied Sport and Exercise Psychology	120	M	M	M	M
4 Field and Laboratory-based Fitness Testing	90			M	M
5 Applied Research Methods in Sport and Exercise Science	90		M	M	M
6 Coaching for Performance and Fitness	90	M	M	M	M
7 Biomechanics in Sport and Exercise Science	60	O	O	O	O
8 Specialised Fitness Training	60	O	O	O	O
9 Research Project in Sport and Exercise Science	60		O	O	O
10 Physical Activity for Individual and Group-based Exercise	60	O	O	O	O
11 Sports Massage	60		O	O	O
12 Sociocultural Issues in Sport and Exercise	60		O	O	O
13 Nutrition for Sport and Exercise Performance	120				M
14 Technology in Sport and Exercise Science	60				O
15 Sports Injury and Assessment	60				O

## Qualification and unit content

Pearson has developed the content of the new BTEC Nationals in collaboration with employers and representatives from higher education and relevant professional bodies. In this way, we have ensured that content is up to date and that it includes the knowledge, understanding, skills and attributes required in the sector.

Each qualification in the suite has its own purpose. The mandatory and optional content provides a balance of breadth and depth, while retaining a degree of choice for individual learners to study content relevant to their own interests and progression choices. Also, the content may be applied during delivery in a way that is relevant to local employment needs.

The proportion of mandatory content ensures that all learners are following a coherent programme of study and acquiring the knowledge, understanding and skills that will be recognised and valued. Learners are expected to show achievement across mandatory units as detailed in *Section 2*.

BTEC Nationals have always required applied learning that brings together knowledge and understanding (the cognitive domain) with practical and technical skills (the psychomotor domain). This is achieved through learners performing vocational tasks that encourage the development of appropriate vocational behaviours (the affective domain) and transferable skills. Transferable skills are those such as communication, teamwork and research and analysis, which are valued in both higher education and the workplace.

Our approach provides rigour and balance, and promotes the ability to apply learning immediately in new contexts. Further details can be found in *Section 2*.

Centres should ensure that delivery of content is kept up to date. In particular, units may include reference to regulation, legislation, policies and regulatory/standards organisations. The units are designed to provide guidance on breadth and depth of coverage and may be adjusted to update content and to reflect variations within the UK.

## Assessment

Assessment is specifically designed to fit the purpose and objective of the qualification. It includes a range of assessment types and styles suited to vocational qualifications in the sector. There are three main forms of assessment that you need to be aware of: external, internal and synoptic.

### Externally-assessed units

Each external assessment for a BTEC National is linked to a specific unit. All of the units developed for external assessment are of 90 or 120 GLH to allow learners to demonstrate breadth and depth of achievement. Each assessment is taken under specified conditions, then marked by Pearson and a grade awarded. Learners are permitted to resit external assessments during their programme. You should refer to our website for current policy information on permitted retakes.

The styles of external assessment used for qualifications in the Sport and Exercise Science suite are:

- examinations – all learners take the same assessment at the same time, normally with a written outcome
- set tasks – learners take the assessment during a defined window and demonstrate understanding through completion of a vocational task.

Some external assessments include a period of preparation using set information. External assessments are available once or twice a year. For detailed information on the external assessments please see the table in *Section 2*. For further information on preparing for external assessment see *Section 5*.

## **Internally-assessed units**

Most units in the sector are internally assessed and subject to external standards verification. This means that you set and assess the assignments that provide the final summative assessment of each unit, using the examples and support that Pearson provides. Before you assess you will need to become an approved centre, if you are not one already. You will need to prepare to assess using the guidance in *Section 6*.

In line with the requirements and guidance for internal assessment, you select the most appropriate assessment styles according to the learning set out in the unit. This ensures that learners are assessed using a variety of styles to help them develop a broad range of transferable skills. Learners could be given opportunities to:

- write up the findings of their own research
- use case studies to explore complex or unfamiliar situations
- carry out projects for which they have choice over the direction and outcomes
- demonstrate practical and technical skill.

You will make grading decisions based on the requirements and supporting guidance given in the units. Learners may not make repeated submissions of assignment evidence. For further information see *Section 6*.

## **Synoptic assessment**

Synoptic assessment requires learners to demonstrate that they can identify and use effectively, in an integrated way, an appropriate selection of skills, techniques, concepts, theories and knowledge from across the whole sector as relevant to a key task. BTEC learning has always encouraged learners to apply their learning in realistic contexts using scenarios and realistic activities that will permit learners to draw on and apply their learning. For these qualifications we have formally identified units that contain a synoptic assessment task. Synoptic assessment must take place after the teaching and learning of other mandatory units in order for learners to be able to draw from the full range of content. The synoptic assessment gives learners an opportunity to independently select and apply learning from across their programmes in the completion of a vocational task. Synoptic tasks may be in internally- or externally-assessed units. The particular unit that contains the synoptic tasks for this qualification is shown in the structure in *Section 2*.

## **Language of assessment**

Assessment of the internal and external units for these qualifications will be available in English. All learner work must be in English. A learner taking the qualifications may be assessed in British or Irish Sign Language where it is permitted for the purpose of reasonable adjustment. For information on reasonable adjustments see *Section 7*.

## Grading for units and qualifications

Achievement in the qualification requires a demonstration of depth of study in each unit, assured acquisition of a range of practical skills required for employment or progression to higher education, and successful development of transferable skills. Learners achieving a qualification will have achieved across mandatory units, including external and synoptic assessment.

Units are assessed using a grading scale of Distinction (D), Merit (M), Pass (P), Near Pass (N) and Unclassified (U). The grade of Near Pass is used for externally-assessed units only. All mandatory and optional units contribute proportionately to the overall qualification grade, for example a unit of 120 GLH will contribute double that of a 60 GLH unit.

Qualifications in the suite are graded using a scale of P to D\*, **or** PP to D\*D\*, **or** PPP to D\*D\*D\*. Please see *Section 9* for more details. The relationship between qualification grading scales and unit grades will be subject to regular review as part of Pearson's standards monitoring processes on the basis of learner performance and in consultation with key users of the qualification.

## UCAS Tariff points

The BTEC Nationals attract UCAS points. Please go to the UCAS website for full details of the points allocated.

# 1 Qualification purpose

## Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science

In this section, you will find information on the purpose of this qualification and how its design meets that purpose through the qualification objective and structure. We publish a full 'Statement of Purpose' for each qualification on our website. These statements are designed to guide you and potential learners to make the most appropriate choice about the size of qualification suitable at recruitment.

### Who is this qualification for?

The Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science is intended to be an Applied General qualification for post-16 learners who want to continue their education through applied learning and who aim to progress to higher education, and ultimately to employment, probably in the sport sector. The qualification is equivalent in size to one A Level and has been designed as a one-year, full-time study programme, or a full two-year programme when studied alongside further Level 3 qualifications. Learners wishing to take this BTEC will have successfully completed a Level 2 programme of learning with GCSEs or vocational qualifications.

### What does this qualification cover?

The content of this qualification has been developed in consultation with academics to ensure that it supports progression to higher education. In addition, employers and professional bodies have been involved and consulted, in order to confirm that the content is appropriate and consistent with current practice.

Everyone taking this qualification will study three mandatory units, covering the following content areas:

- functional anatomy
- applied sport and exercise psychology
- coaching for performance and fitness.

The mandatory content allows learners to concentrate on the development of their practical skills and the broad knowledge required for entrance to higher education programmes in sport and exercise science.

Learners choose one optional unit from a small range of options, which have been designed to support progression to a variety of sport courses in higher education and to link with relevant occupational areas. This allows learners either to choose a specific specialist area in which they wish to develop their skill, or to continue on a broad programme.

### What could this qualification lead to?

In addition to the sport and exercise science sector-specific content outlined above, the requirements of the qualification will mean learners develop the transferable and higher-order skills that are highly regarded by higher education and employers. For example, communication, teamwork and leadership skills.

The qualification carries UCAS points and, when taken alongside another Level 3 qualification, it is recognised by higher education providers as meeting admission requirements for many relevant sport science or related courses, for example:

- BSC (Hons) in Sport and Exercise Science, if taken alongside A Levels in Biology and Psychology
- BSC (Hons) in Biology, if taken alongside A levels in Biology and Mathematics
- BA (Hons) in Applied Sport Science, if taken alongside an A Level in Mathematics and a BTEC in Applied Science.

Learners should always check the entry requirements for degree programmes with specific higher education providers.



### **How does the qualification provide employability skills?**

- In the BTEC National units, there are opportunities during the teaching and learning phase to give learners practice in developing employability skills. Where employability skills are referred to in this specification, we are generally referring to skills in the following three main categories:
- **cognitive and problem-solving skills:** using critical thinking, approaching non-routine problems applying expert and creative solutions, using systems and technology
- **interpersonal skills:** communicating, working collaboratively, negotiating and influencing, self-presentation
- **intrapersonal skills:** self-management, adaptability and resilience, self-monitoring and development.

There are also specific requirements in some units for assessment of these skills where relevant, for example, where learners are required to undertake real or simulated activities.

### **How does the qualification provide transferable knowledge and skills for higher education?**

All BTEC Nationals provide transferable knowledge and skills that prepare learners for progression to university. The transferable skills that universities value include:

- the ability to learn independently
- the ability to research actively and methodically
- the ability to give presentations and be active group members.

BTEC learners can also benefit from opportunities for deep learning where they are able to make connections among units and select areas of interest for detailed study. BTEC Nationals provide a vocational context in which learners can develop the knowledge and skills required for particular degree courses, including:

- reading technical texts
- effective writing
- analytical skills
- creative development
- preparation for assessment methods used in degrees.

## 2 Structure

### Qualification structure

#### Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science

##### Mandatory units

There are three mandatory units, one internal and two external. Learners must complete and achieve at Near Pass grade or above for both mandatory external units and a Pass grade or above for the mandatory internal unit.

##### Optional units

Learners must complete at least one optional units.

Pearson BTEC Level 3 National Extended Certificate in Sport and Exercise Science				
Unit number	Unit title	GLH	Type	How assessed
<b>Mandatory units – learners complete and achieve all units</b>				
2	Functional Anatomy	90	Mandatory	External
3	Applied Sport and Exercise Psychology	120	Mandatory	External
6	Coaching for Performance and Fitness	90	Mandatory Synoptic	Internal
<b>Optional units – learners complete 1 unit</b>				
7	Biomechanics in Sport and Exercise Science	60	Optional	Internal
8	Specialised Fitness Training	60	Optional	Internal
10	Physical Activity for Individual and Group-based Exercise	60	Optional	Internal

## External assessment

This is a summary of the type and availability of external assessment, which is of units making up 58 per cent of the total qualification GLH. See *Section 5* and the units and sample assessment materials for more information.

Unit	Type	Availability
<b>Unit 2: Functional Anatomy</b>	<ul style="list-style-type: none"><li>• Written examination set and marked by Pearson.</li><li>• 1.5 hours.</li><li>• 60 marks.</li></ul>	<b>Jan and May/June</b>
<b>Unit 3: Applied Sport and Exercise Psychology</b>	<ul style="list-style-type: none"><li>• A task set and marked by Pearson and completed in a single session of three hours under supervised conditions.</li><li>• Written submission.</li><li>• 60 marks.</li></ul>	<b>Dec/Jan and May/June</b> <b>For assessment from January 2019 onwards</b>

## Synoptic assessment

The mandatory synoptic assessment requires learners to apply learning from across the qualification to the completion of a defined vocational task. Within the assessment for *Unit 6: Coaching for Performance and Fitness* learners complete the planning, delivery and review of a coaching session. They will explore different practices and measures that could be used to develop sports performance, drawing on their knowledge of anatomy and psychology from *Unit 2: Functional Anatomy* and *Unit 3: Applied Sport and Exercise Psychology*. Learners complete the task using knowledge and understanding from their studies of the sector and apply both transferable and specialist knowledge and skills.

In assessing the unit assignments will require learners to select from and apply their learning from across their programme. The unit provides further information.

## Employer involvement in assessment and delivery

You are encouraged to give learners opportunities to be involved with employers. See *Section 4* for more information.

## 3 Units

### Understanding your units

The units in this specification set out our expectations of assessment in a way that helps you to prepare your learners for assessment. The units help you to undertake assessment and quality assurance effectively.

Each unit in the specification is set out in a similar way. There are two types of unit format:

- internal units
- external units.

This section explains how the units work. It is important that all teachers, assessors, internal verifiers and other staff responsible for the programme review this section.

#### Internal units

Section	Explanation
<b>Unit number</b>	The number is in a sequence in the sector. Numbers may not be sequential for an individual qualification.
<b>Unit title</b>	This is the formal title that we always use and it appears on certificates.
<b>Level</b>	All units are at Level 3 on the national framework.
<b>Unit type</b>	This shows if the unit is internal or external only. See structure information in <i>Section 2</i> for full details.
<b>GLH</b>	Units may have a GLH value of 120, 90 or 60. This indicates the numbers of hours of teaching, directed activity and assessment expected. It also shows the weighting of the unit in the final qualification grade.
<b>Unit in brief</b>	A brief formal statement on the content of the unit that is helpful in understanding its role in the qualification. You can use this in summary documents, brochures etc.
<b>Unit introduction</b>	This is designed with learners in mind. It indicates why the unit is important, how learning is structured, and how learning might be applied when progressing to employment or higher education.
<b>Learning aims</b>	These help to define the scope, style and depth of learning of the unit. You can see where learners should be learning standard requirements ('understand') or where they should be actively researching ('investigate'). You can find out more about the verbs we use in learning aims in <i>Appendix 2</i> .
<b>Summary of unit</b>	This new section helps teachers to see at a glance the main content areas against the learning aims and the structure of the assessment. The content areas and structure of assessment are required. The forms of evidence given are suitable to fulfil the requirements.
<b>Content</b>	This section sets out the required teaching content of the unit. Content is compulsory except when shown as 'e.g.'. Learners should be asked to complete summative assessment only after the teaching content for the unit or learning aim(s) has been covered.

Section	Explanation
<b>Assessment criteria</b>	<p>Each learning aim has Pass and Merit criteria. Each assignment has at least one Distinction criterion.</p> <p>A full glossary of terms used is given in <i>Appendix 2</i>. All assessors need to understand our expectations of the terms used.</p> <p>Distinction criteria represent outstanding performance in the unit. Some criteria require learners to draw together learning from across the learning aims.</p>
<b>Essential information for assignments</b>	<p>This shows the maximum number of assignments that may be used for the unit to allow for effective summative assessment, and how the assessment criteria should be used to assess performance.</p>
<b>Further information for teachers and assessors</b>	<p>The section gives you information to support the implementation of assessment. It is important that this is used carefully alongside the assessment criteria.</p>
<b>Resource requirements</b>	<p>Any specific resources that you need to be able to teach and assess are listed in this section. For information on support resources see <i>Section 10</i>.</p>
<b>Essential information for assessment decisions</b>	<p>This information gives guidance for each learning aim or assignment of the expectations for Pass, Merit and Distinction standard. This section contains examples and essential clarification.</p>
<b>Links to other units</b>	<p>This section shows you the main relationship among units. This section can help you to structure your programme and make best use of materials and resources.</p>
<b>Employer involvement</b>	<p>This section gives you information on the units that can be used to give learners involvement with employers. It will help you to identify the kind of involvement that is likely to be successful.</p>

## External units

Section	Explanation
<b>Unit number</b>	The number is in a sequence in the sector. Numbers may not be sequential for an individual qualification.
<b>Unit title</b>	This is the formal title that we always use and it appears on certificates.
<b>Level</b>	All units are at Level 3 on the national framework.
<b>Unit type</b>	This shows if the unit is internal or external only. See structure information in <i>Section 2</i> for full details.
<b>GLH</b>	Units may have a GLH value of 120, 90 or 60 GLH. This indicates the numbers of hours of teaching, directed activity and assessment expected. It also shows the weighting of the unit in the final qualification grade.
<b>Unit in brief</b>	A brief formal statement on the content of the unit.
<b>Unit introduction</b>	This is designed with learners in mind. It indicates why the unit is important, how learning is structured, and how learning might be applied when progressing to employment or higher education.
<b>Summary of assessment</b>	This sets out the type of external assessment used and the way in which it is used to assess achievement.
<b>Assessment outcomes</b>	These show the hierarchy of knowledge, understanding, skills and behaviours that are assessed. Includes information on how this hierarchy relates to command terms in sample assessment materials (SAMs).
<b>Essential content</b>	For external units all the content is obligatory, the depth of content is indicated in the assessment outcomes and sample assessment materials (SAMs). The content will be sampled through the external assessment over time, using the variety of questions or tasks shown.
<b>Grade descriptors</b>	We use grading descriptors when making judgements on grade boundaries. You can use them to understand what we expect to see from learners at particular grades.
<b>Key terms typically used in assessment</b>	These definitions will help you analyse requirements and prepare learners for assessment.
<b>Resources</b>	Any specific resources that you need to be able to teach and assess are listed in this section. For information on support resources see <i>Section 10</i> .
<b>Links to other units</b>	This section shows the main relationship among units. This section can help you to structure your programme and make best use of materials and resources.
<b>Employer involvement</b>	This section gives you information on the units that can be used to give learners involvement with employers. It will help you to identify the kind of involvement that is likely to be successful.

## Index of units

This section contains all the units developed for this qualification. Please refer to *page 4* to check which units are available in all qualifications in the sport and exercise science sector.

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# Unit 2: Functional Anatomy

Level: **3**

Unit type: **External**

Guided learning hours: **90**

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## Unit in brief

Learners explore how the anatomy of the cardiovascular, respiratory, skeletal and muscular systems function to produce movements in sport and exercise.

## Unit introduction

The human body is made up of different systems that work together to enable us to take part in sport and exercise. The respiratory system enables our bodies to extract oxygen from the air around us and to dispose of waste products, such as carbon dioxide, that would otherwise poison us if allowed to build up. The cardiovascular system plays a key role in delivering oxygen to working muscles. When the oxygen is used, it gives us the energy to enable the musculoskeletal system to bring about the movement that allows us to take part in sport and exercise. In order to appreciate how each of these systems function, you will explore how the anatomical structure and physiology of each system contributes to the production of movement of the human body in sport and exercise. In addition, you will analyse the effectiveness of each anatomical system in producing sport and exercise movements, and explore what impact each system has on performing movements successfully.

This unit will develop your knowledge and understanding of how the human body produces movement as well as the factors that can contribute to making the performance of movement more effective. It will prepare you for progression to higher education or a career in sport science, coaching, or the fitness industry.

## Summary of assessment

This unit is assessed by a written examination set and marked by Pearson. The examination will be one hour and 30 minutes in length.

The number of marks for the assessment is 60. The paper will contain a number of short- and long-answer questions that will assess learners' understanding of the anatomy of the cardiovascular, respiratory, skeletal, and muscular systems. Learners will use their knowledge and understanding of the different systems to analyse how they produce movements in sport and exercise, including how they interrelate to carry out those movements.

The assessment availability is twice a year in January and May/June.

Sample assessment materials will be available to help centres prepare learners for assessment.

## Assessment outcomes

**AO1** Demonstrate knowledge and understanding of the language, structure, characteristics and function of each anatomical system

Command words: describe, give, identify, name, state

Marks: range from 1 to 4 marks

**AO2** Apply knowledge and understanding of the structure, characteristics and function of the anatomical systems in context

Command words: describe, explain

Marks: range from 2 to 4 marks

**AO3** Analyse the anatomical systems' effectiveness in producing sport and exercise movements and evaluate their impact on performing movements successfully

Command words: analyse, assess, evaluate, discuss, to what extent

Marks: range from 8 to 14 marks

**AO4** Make connections between anatomical systems and how they interrelate in order to carry out different exercise and sporting movements in context

Command words: analyse, assess, evaluate, discuss, to what extent

Marks: range from 8 to 14 marks

## Essential content

The essential content is set out under content areas. Learners must cover all specified content before the assessment.

### A Anatomical positions, terms and references

#### A1 Anatomical language

Learners must understand anatomical language to describe different parts of the body in reference to their correct location.

- Anatomical standing position (point of reference).
- Anatomical language:
  - anterior
  - posterior
  - lateral
  - medial
  - proximal
  - distal
  - superior
  - inferior
  - peripheral
  - deep
  - supine
  - prone.

### B Anatomy of the cardiovascular system

#### B1 Location, anatomy and function of cardiovascular components

- Function and anatomy of the heart:
  - atria
  - ventricles
  - bicuspid valve
  - tricuspid valve
  - semilunar valves
  - chordae tendineae
  - septum
  - coronary arteries.
- Location and anatomy of blood vessels:
  - aorta
  - vena cava
  - pulmonary artery
  - pulmonary vein
  - arteries
  - arterioles
  - veins
  - venuoles
  - capillaries.
- Composition of blood:
  - red blood cells (erythrocytes)
  - plasma
  - white blood cells
  - platelets.
- Lymphatic system.

## **B2 Function of the cardiovascular system**

Learners must understand the function of the cardiovascular system.

- Delivery of oxygen and nutrients.
- Removal of waste products – carbon dioxide and lactate.
- Control of blood flow – vasoconstriction, vasodilation of blood vessels.
- Fight infection.
- Clot blood.

## **B3 Cardiac cycle**

- Blood flow through the heart:
  - systole
  - diastole.
- Neural control of the cardiac cycle:
  - sinoatrial node (SAN)
  - atrioventricular node (AVN)
  - bundle of His
  - Purkinje fibres.

## **C Anatomy of the respiratory system**

### **C1 Location, anatomy and function of respiratory system components**

- Nasal cavity.
- Epiglottis.
- Pharynx.
- Larynx.
- Trachea.
- Bronchus.
- Bronchioles.
- Lungs (lobes).
- Alveoli.
- Diaphragm.
- Thoracic cavity.
- Pleura (visceral and parietal).
- Intercostal muscles (external and internal).

### **C2 Function of the respiratory system**

Learners must understand the function of the respiratory system.

- Mechanisms of breathing (inspiration and expiration).
- Gaseous exchange (percentage of carbon dioxide and oxygen inspired and expired, diffusion of gases).
- Lung volumes (tidal volume, vital capacity and residual volume).

### **C3 Control of breathing**

Learners must understand how breathing rate is controlled in response to exercise and sports performance.

- Neural (medulla oblongata as the respiratory centre in the brain).
- Chemical (chemoreceptors detect change in blood carbon dioxide concentrations and changes in pH).

## **D Anatomy of the skeletal system**

### **D1 Anatomy of the bone**

Learners must understand bone anatomy.

- Long bone:
  - periosteum
  - bone minerals
  - bone marrow
  - epiphysis
  - growth plates
  - diaphysis
  - cancellous bone
  - compact bone
  - articular cartilage.
- Bony landmarks:
  - notches
  - fossae
  - condyles
  - processes
  - tuberosity.

### **D2 Process of bone growth and remodelling**

- Cells involved in bone growth and ossification (osteoclasts, osteoblasts, osteocytes).
- Bone growth (growth plates, epiphysis).
- Bone remodelling.
- Uptake of minerals (calcium, vitamin D).

### **D3 Location of skeletal bones**

- Learners must understand the location of bones in the skeletal system:
  - cranium
  - clavicle
  - ribs
  - sternum
  - scapula
  - humerus
  - radius
  - ulna
  - carpals
  - metacarpals
  - phalanges
  - pelvis (ilium, ischium, pubis, iliac crest)
  - vertebral column (cervical, thoracic, lumbar, sacrum, coccyx, curves of the spine)
  - femur
  - patella
  - tibia
  - fibula
  - tarsals
  - calcaneus
  - metatarsals
  - bones that form the axial skeleton
  - bones that form the appendicular skeleton.

- Types of bone:
  - long
  - short
  - flat
  - sesamoid
  - irregular.

#### **D4 Ligaments**

Learners must understand the role of ligaments in the skeletal system.

- Function of ligaments.
- Location of ligaments in stabilising and restricting joint movements.

#### **D5 Joints**

Learners must understand how joints of the skeleton are used in sport and exercise techniques and actions.

- Classification of joints:
  - fibrous (fixed)
  - cartilaginous (slightly moveable)
  - synovial (freely moveable).
- Types of synovial joints:
  - ball and socket
  - condyloid
  - gliding
  - saddle
  - hinge
  - pivot.
- Structure of synovial joints and the function of their components in sport and exercise:
  - joint capsule
  - bursa
  - articular cartilage
  - synovial membrane
  - synovial fluid
  - ligaments.
- Range of movement at synovial joints due to shape of articulating bones and use in sport and exercise.

#### **D6 Function of skeletal system**

Learners must understand the functions of the skeleton.

- Functions of the skeleton:
  - supporting framework
  - protection
  - attachment for skeletal muscle
  - source of blood cell production
  - store of minerals
  - movement.

## **E Anatomy of the muscular system**

### **E1 Muscle types**

Learners must understand the different muscle types.

- Cardiac (non-fatiguing, involuntary).
- Skeletal (fatiguing, voluntary).
- Smooth (involuntary).
- Skeletal muscle fibre types (type I, type IIa type IIx).
- Anatomy of the skeletal muscle (epimysium, perimysium, endomysium, fascicle).

### **E2 Neuromuscular process of muscle contraction**

- Neuromuscular control:
  - nerve impulse and action potential
  - neuromuscular junction (synapses)
  - neurotransmitter (acetylcholine).
- Sliding filament theory:
  - calcium ions
  - myofibril
  - sarcomere
  - actin
  - myosin
  - cross-bridges
  - H zone
  - Z line
  - A band
  - I band
  - troponin
  - tropomyosin
  - ATPase
  - ATP.
- Types of muscle contraction:
  - isometric
  - concentric
  - eccentric.
- Muscle fibre type recruitment:
  - recruitment at different levels of intensity of exercise.

### **E3 Location of skeletal muscles**

Learners must know the location and action of skeletal muscle:

- deltoids (posterior, anterior, medial)
- medial and lateral shoulder rotators
- biceps brachii
- triceps brachii
- wrist flexors
- wrist extensors
- forearm supinators
- forearm pronators
- sternocleidomastoid
- pectoralis major
- rectus abdominis
- obliques
- transverse abdominis (TVA)

- quadriceps (rectus femoris, vastus medialis, vastus lateralis, vastus intermedius)
- iliopsoas
- tibialis anterior
- erector spinae
- trapezius
- rhomboids
- latissimus dorsi
- gluteals (gluteus maximus, gluteus medius, gluteus minimus)
- hamstrings (biceps femoris, semitendinosus, semimembranosus)
- gastrocnemius
- soleus.

#### **E4 Antagonistic muscle pairs**

Learners must understand movement of muscles in antagonistic pairs and their use in sport and exercise:

- agonist
- antagonist
- synergist
- fixator.

#### **E5 Types of movement**

Learners must understand the different types of movement with application of anatomical terminology:

- flexion (horizontal flexion, hip flexion, shoulder flexion, plantarflexion, dorsiflexion, lateral flexion)
- extension (hyperextension, horizontal extension, hip extension, shoulder extension)
- abduction
- adduction
- rotation (medial and lateral)
- circumduction
- pronation
- supination
- elevation
- depression
- protraction
- retraction.

#### **E6 Planes of movement**

- Description of planes:
  - sagittal plane
  - frontal plane
  - transverse plane.
- Types of movement in each plane:
  - sagittal plane – flexion and extension related movements
  - frontal plane – abduction and adduction related movements
  - transverse plane – rotation related movement.



## **F Analysis of the skeletal and muscular systems and how they produce movements in sport and exercise**

### **F1 Phases of sport and exercise movement**

Learners must understand the application of the muscular and skeletal systems to each phase of movement using anatomical language.

- Phases appropriate to the movement:
  - preparation
  - execution
  - follow through.

### **F2 Interrelationship of the muscular and skeletal systems in movement analysis**

Learners must understand how the muscular and skeletal systems work together in each phase of a movement.

- Body sections for analysis:
  - upper body
  - trunk
  - lower body.
- Bones involved in movement:
  - type of bone.
- Muscles involved in movement:
  - role/function of antagonistic pairs
  - role/function of synergist muscles
  - role/function of fixator muscles
  - types of contraction.
- Joints involved in movement:
  - type of joint
  - bones forming each joint
  - range of movement permitted at each joint.
- Type of movements.
- Planes of movement.
- Movement efficiency:
  - dynamic (balanced) stability at joints and mobility at other joints
  - kinetic chain
  - transfer of movement across body segments
  - muscle balance.

## Grade descriptors

To achieve a grade a learner is expected to demonstrate these attributes across the essential content of the unit. The principle of best fit will apply in awarding grades.

### Level 3 Pass

Learners demonstrate knowledge of functional anatomy and apply it to exercise and sports performance. They have a sound understanding of the structures, functions and characteristics of the anatomical systems and are able to apply this to a range of familiar and unfamiliar contexts. Learners can interpret information related to exercise and sports performance and make judgements on how the anatomical systems allow for movements to be carried out.

### Level 3 Distinction

Learners demonstrate thorough knowledge and understanding of the anatomical systems in exercise and sports performance and can apply this to a range of familiar and unfamiliar contexts. Learners are able to analyse how the body carries out exercise and sporting movements.

Learners will be able to interpret information on exercise and sports performance and be able to make reasoned judgements on how anatomical systems carry out exercise and sporting movements in a range of different contexts. They will demonstrate understanding of the interrelationships between the anatomical systems.

## Key terms typically used in assessment

The following table shows the key terms that will be used consistently by Pearson in our assessments to ensure students are rewarded for demonstrating the necessary skills.

Please note: the list below will not necessarily be used in every paper/session and is provided for guidance only.

Command or term	Definition
Analyse	Learners examine in detail, in order to discover the meaning or essential features of a theme, topic or situation, or break something down into its components or examining factors methodically and in detail. To identify separate factors, say how they are related and explain how each one contributes to the topic.
Assess	Learners present a careful consideration of varied factors or events that apply to a specific situation or identifies those which are the most important or relevant to arrive at a conclusion.
Describe	Learners give an account, or details, of 'something' or give an account of a 'process'.
Discuss	Learners identify the issue/situation/problem/argument that is being assessed in the question given, exploring all aspects and investigating fully.

Command or term	Definition
Evaluate	Learners review information before bringing it together to form a conclusion or come to a supported judgement of a subject's qualities in relation to its context, drawing on evidence: strengths, weaknesses, alternative actions, relevant data or information.
Explain	Learners convey understanding by making a point/statement or by linking the point/statement with a justification/expansion.
Give	Learners can provide examples, justifications and/or reasons to a context.
Identify	Learners assess factual information that may require a single word answer, although sometimes a few words or a maximum of a single sentence are required.
State/name	Learners give a definition or example.
To what extent	Learners review information then bring it together to form a judgement or conclusion, following the provision of a balanced and reasoned argument.

### Links to other units

This is a mandatory unit and underpins knowledge throughout the qualification.

### Employer involvement

Centres may involve employers in the delivery of this unit if there are local opportunities. There is no specific guidance related to this unit.



# Unit 3: Applied Sport and Exercise Psychology

Level: **3**

Unit type: **External**

Guided learning hours: **120**

## Unit in brief

This unit covers the major psychological factors that can affect performers in sport and exercise environments, and the interventions that can promote an appropriate mindset.

## Unit introduction

Success in sport is dependent on a series of scientific factors. Performers need to be prepared physically, have the correct technique and follow an appropriate nutritional strategy. Performers must also approach performance with the correct mindset and be able to manage their thoughts and feelings during competition and training sessions.

In this unit, you will develop an understanding of the major psychological factors that impact on sports performers. You will examine the predominant theories that help us to understand these factors, how they can affect sports performers positively and negatively, and the interventions that can be used to control psychological state. You will start by examining motivation, which is the force that underpins all the thoughts and feelings of an individual, and look at the different ways to motivate people. You will examine stress, arousal and anxiety which can result from performing in highly pressurised, competitive environments, and the relationship of each one to optimal performance. You will explore other key concepts, such as self-confidence and mindset, and develop an understanding of how they can impact on performance. You will also focus on the functioning of sports groups and teams and how their outcomes can be influenced by cohesion and styles of leadership. Finally, you will be introduced to a range of psychological interventions and how they can be applied to support sports performers in achieving optimal outcomes.

This unit will give you a sound foundation for progression to higher education and employment. The application of sports psychology knowledge is invaluable for sports performers and for a range of sporting careers such as sports coaching, sports leadership and fitness training.

## Summary of assessment

This unit will be assessed through a single part task, written and marked by Pearson. This single part task will be taken under supervised conditions in a single session of 3 hours timetabled by Pearson.

Please see *Issue 2* of the Sample Assessment Material to help prepare learners for assessment.

The number of marks for both versions of the task is 60.

The assessment availability is December/January and May/June each year.

## Assessment outcomes

**AO1** Demonstrate knowledge and understanding of psychological factors, concepts, interventions and theories in sport and exercise activities

**AO2** Apply knowledge and understanding of psychological factors, concepts, interventions and theories, and their influence in sport and exercise activities on real-life sporting contexts

**AO3** Analyse and evaluate information related to individuals or teams to determine appropriate psychological interventions

**AO4** Be able to recommend psychological interventions underpinned by theory and in context with appropriate justification

## Essential content

The essential content is set out under content areas. Learners must cover all specified content before the assessment.

### A Motivation for sports and exercise

#### A1 Types of motivation

Understand the motivation of individuals and teams and its effect on sports performance and exercise.

- Different types of motivation:
  - intrinsic
  - extrinsic
  - amotivation.
- Relationship between different types of motivation.

#### A2 Theories of motivation

Understand how theories are applied in sport and exercise environments.

- Need Achievement Theory:
  - need to achieve success
  - need to avoid failure.
- Achievement Goal Theory:
  - task orientation
  - outcome or ego orientation.
- Self-determination theory.
- Weiner's attribution theory.

#### A3 Motivational environment and its influence on sports performers

Understand the variety of influences on sports performers, and how they affect motivation and their links to theories of motivation.

- The influence of coach, teacher or instructor on motivation:
  - mastery climate and use of TARGET (task, authority, reward, grouping, evaluation and timing)
  - competitive climate.
- The influence of family and peers on motivation.
- The influence of personality on motivation (traits, social learning).
- The influence of the physical environment on motivation.

#### A4 Signs and effects of over-motivation

Understand the effects of over-motivation on sports and exercise performance.

- Over-motivation.
- Signs of over-motivation:
  - over-training
  - training addiction
  - social withdrawal.
- Effects of over-motivation:
  - over-confidence
  - decrement in performance
  - burnout
  - injury.

## **B Competitive pressure in sport**

### **B1 Theories of arousal-performance relationship**

- Definition of arousal.
- Theories of arousal-performance relationship:
  - drive theory
  - inverted-U hypothesis
  - catastrophe theory
  - individual zones of optimal functioning.
- Effects of changes in arousal on sports performance:
  - improvements or decrements in performance
  - changes in attentional focus
  - increase in stress and anxiety levels
  - experience of flow states
  - choking.

### **B2 Stress and anxiety on sports performance**

Understand stress and anxiety, and their impact on the sports performer.

- Stress:
  - the four-stage stress process
  - eustress and distress.
- Anxiety:
  - state and trait
  - cognitive, somatic and behavioural
  - competitive anxiety
  - multidimensional anxiety theory
  - reversal theory.
- Sources of stress:
  - internal
  - external.
- Symptoms of stress and anxiety:
  - fight or flight response
  - cognitive
  - somatic
  - behavioural.

### **B3 Consequences of stress and anxiety**

Understand how and why stress and anxiety affect sports performance.

- Positive consequences of stress and anxiety:
  - positive mental state
  - increase of self-confidence
  - improvement in performance
  - increased energy
  - increased motivation
  - increased focus.
- Negative consequences of stress and anxiety:
  - negative mental state
  - loss of self-confidence
  - decrement in performance
  - possible injury
  - aggression.



**B4 Aggression as a response to competitive pressure**

Understand different types of aggression and why sport performers may behave aggressively.

- Types:
  - assertive behaviour
  - instrumental
  - hostile
  - relational.
- Theories:
  - instinct
  - social learning
  - frustration-aggression theory
  - adapted frustration-aggression theory.

**C Effects of self-confidence, self-efficacy and self-esteem on sport and exercise performance****C1 Self-confidence and sport and exercise performance**

- Definition of self-confidence.
- Vealey's Multidimensional Model of Sport Confidence.
- Impact of different levels of self-confidence on sport and exercise performance:
  - optimal self-confidence
  - low self-confidence
  - over-confidence.
- Influence of expectations on sport and exercise performance:
  - expectations of self
  - expectations of coach.

**C2 Self-efficacy in sport and exercise performance**

Understand the factors influencing self-efficacy and their links to other psychological theories.

- Definition of self-efficacy.
- Bandura's Self-efficacy Theory:
  - performance accomplishments
  - vicarious experiences
  - verbal persuasion
  - emotional arousal
  - efficacy expectations
  - athletic performance.
- Application of the model and its impact on sport and exercise performance.

**C3 Self-esteem and its impact on sport and exercise performance**

- Definition of self-esteem.
- Impact of self-esteem.

## **D Mindset in sport and exercise performance**

### **D1 Growth mindset versus fixed mindset**

Understand growth mindset versus fixed mindset and how they influence behaviour in sport and exercise environments.

- Dweck's Theory:
  - fixed mindset
  - growth mindset
  - talent versus effort
  - 10 000 hours practice
  - learned helplessness.
- Application and its impact on sport and exercise skill development.

### **D2 Resilience in sport**

- Definition of resilience.
- Importance of resilience in sport.
- Overcoming adversity:
  - injury
  - burnout
  - slump in form
  - transitions.

### **D3 Perfectionism**

- Analyse the behaviours of the perfectionist in relation to sport and fitness activities.
- Traits of a perfectionist.
- Functional perfectionism.
- Dysfunctional perfectionism.
- Impact of perfectionism on performance.

## **E Group dynamics in sport**

### **E1 Group processes**

- Tuckman's stages of group development.
- Interactive and coactive groups and teams.
- Ringelmann effect and social loafing.

### **E2 Cohesion**

- Carron's conceptual model of cohesion.
- Task and social cohesion.
- Relationship between cohesion and sports performance.

### **E3 Leadership**

- Types of leader:
  - emergent versus prescribed
  - autocratic versus democratic.
- Chelladurai's multidimensional model of leadership:
  - antecedents
  - leader behaviour
  - consequences.
- Application to performance of sports groups and teams:
  - appropriate attentional focus
  - commitment and determination.

## **F Psychological interventions for sports performance and exercise**

Understand psychological interventions and their appropriate application to sports and exercise performers.

### **F1 Aims of psychological interventions**

To develop the characteristics of successful sports performers:

- high motivation
- self-regulation of arousal levels
- positive thoughts
- high levels of self-confidence.

### **F2 Performance profiling**

Understand how principles of performance profiling are applied in sport and exercise settings.

- Applications of performance profiling:
  - providing motivation to improve
  - providing a basis for goal setting
  - identifying psychological strengths and weaknesses
  - develops athlete's self-awareness
  - can be used to monitor and evaluate progress.
- Process of performance profiling:
  - introducing performance profiling
  - eliciting constructs
  - assessment of constructs
  - utilising results from assessment.

### **F3 Goal setting**

Understand how the principles of goal setting are applied in sport and exercise environments for individuals and groups.

- Timescale for goals:
  - short-, medium-, long term.
- Types of goals:
  - performance, outcome and process
  - mastery and competitive.
- Principles of goal setting:
  - SMARTS – specific, measurable, action orientated, realistic, time constrained, self-determined.

### **F4 Imagery in sport and exercise**

Understand how and why imagery is used in sport and exercise settings.

- Definition of imagery.
- Types of imagery:
  - visual (internal and external perspectives)
  - auditory
  - kinaesthetic.
- Uses of imagery:
  - reducing anxiety and stress
  - influencing self-confidence
  - imagining goals
  - mental rehearsal
  - pre-performance routines.

### **F5 Self-talk in sports and exercise**

- Definition of self-talk.
- Types of self-talk:
  - positive
  - negative.
- Uses of self-talk:
  - self-confidence
  - arousal control
  - pre-performance routines.

### **F6 Arousal control techniques in sport and exercise**

Understand different arousal control techniques and their appropriate application in sport and exercise settings.

- Relaxation techniques:
  - progressive muscular relaxation
  - mind-to-muscle techniques (imagery)
  - breathing control.
- Energising techniques:
  - increasing breathing rate
  - pep talks (self-talk)
  - listening to music
  - use of energising imagery
  - positive statements.

## Grade descriptors

To achieve a grade a learner is expected to demonstrate these attributes across the essential content of the unit. The principle of best fit will apply in awarding grades.

### Level 3 Pass

Learners are able to demonstrate knowledge and understanding of psychological factors and concepts, and can apply them in context. They can identify factors and interpret the impact and influence that they have on the performance of an individual or team in context. Learners will be able to rationalise the approach required in different sport and exercise situations. They will be able to apply psychological theories to propose and rationalise psychological interventions that are relevant to the scenario, demonstrating an understanding of the principles behind those interventions.

### Level 3 Distinction

Learners are able to critically evaluate information in context, relating to improving the performance of a team or individual. They can identify psychological factors and provide a detailed interpretation of the impact and influence that they have on the performance of an individual or team in context. Learners can prioritise the psychological factors based on their significance in relation to the effect on individual and/or team performance. They show a thorough understanding of psychological theories and can apply them to propose, prioritise and justify psychological interventions that are relevant to the scenario, demonstrating a detailed understanding of the principles behind those interventions.

## Key terms typically used in assessment

The following table shows the key terms that will be used consistently by Pearson in our assessments to ensure students are rewarded for demonstrating the necessary skills.

Please note: the list below will not necessarily be used in every paper/session and is provided for guidance only.

Command or term	Definition
Analyse	Learners give reasons or evidence to: <ul style="list-style-type: none"> <li>• support an opinion and or decision</li> <li>• prove something right or reasonable.</li> </ul>
Assess	Learners present a careful consideration of varied factors or events that apply to a specific situation or, to identify those which are the most important or relevant and arrive at a conclusion.
Evaluate	Learners' work draws on varied information, themes or concepts to consider wider aspects such as: <ul style="list-style-type: none"> <li>• strengths or weaknesses</li> <li>• advantages or disadvantages</li> <li>• alternative actions</li> <li>• relevance or significance.</li> </ul> The inquiry should lead to a supported judgement showing relationship to its context. This will often be in a conclusion.

Command or term	Definition
Interpretation	Learners are able to draw the meaning, purpose or qualities of something from stimulus.
Intervention	An action performed to bring about change in people or teams.
Justification/rationalisation	Learners give reasons or evidence to: <ul style="list-style-type: none"> <li>• support an opinion and or decision</li> <li>• prove something right or reasonable.</li> </ul>
Psychological factors	Examples are motivation, anxiety, arousal, stress, self-confidence, mindset, aggression.
Relevance	Important to the matter at hand.
Recommend	Learners put forward (someone or something) with approval as being suitable for a particular purpose or role.

### Links to other units

This unit links to:

- Unit 5: Applied Research Methods in Sport and Exercise Science
- Unit 6: Coaching for Performance and Fitness
- Unit 8: Specialised Fitness Training
- Unit 9: Research Project in Sport and Exercise Science
- Unit 10: Physical Activity for Individual and Group-based Exercise
- Unit 11: Sports Massage
- Unit 12: Sociocultural Issues in Sport and Exercise.
- Unit 15: Sports Injury and Assessment.

### Employer involvement

Centres may involve employers in the delivery of this unit if there are local opportunities.

This unit would benefit from employer involvement in the form of guest speakers.

# Unit 6: Coaching for Performance and Fitness

Level: **3**

Unit type: **Internal**

Guided learning hours: **90**

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## Unit in brief

Learners will develop the knowledge and ability to plan, deliver and evaluate coaching sessions that promote athletes' technical, tactical and fitness performance.

## Unit introduction

National governing bodies (NGBs) in sport are pursuing international and other major competition success. There is, therefore, a demand for sports coaches who can develop the performance and competition fitness of athletes to produce elite performers.

In this unit, you will develop coaching skills, knowledge, qualities and best practices, allowing for sessions to incorporate progression over time. You will develop your planning, delivery and reflection skills, as well as your ability to use a variety of coaching practices. You will explore different practices and measures that could be used to develop sports performance. You will undertake the key vocational task of coaching a session to improve the performance of the athletes through enhancement of techniques, their application and the improvement of fitness. Finally, you will learn how to effectively evaluate the impact of your own coaching for the future development of athletes and of you as a coach. In this unit you will draw on your learning from across your programme to complete assessment tasks.

To be able to complete the assessment activity within this unit, you will select and apply knowledge and skills developed in your study of the mandatory content, and your wider learning from across the programme. Skills and knowledge used follow on from those developed in *Unit 2: Functional Anatomy* and *Unit 3: Applied Sport and Exercise Psychology*. Learners may also draw on application of research skills from *Unit 5: Applied Research Methods in Sport and Exercise Science*.

This combination of knowledge, understanding and skills will help to prepare you for a range of careers, such as sports coach or physical education teacher, or for higher education courses in the sport, fitness and active leisure sector.

## Learning aims

In this unit you will:

- A** Investigate coaching for performance and fitness
- B** Explore practices, adaptations and measures used to develop performance and fitness
- C** Demonstrate effective planning of coaching to develop performance and fitness
- D** Explore the impact of coaching for performance and fitness.

## Summary of unit

Learning aim	Key content areas	Recommended assessment approach
<b>A</b> Investigate coaching for performance and fitness	<p><b>A1</b> Skills and knowledge for coaching for performance and fitness</p> <p><b>A2</b> Qualities for coaching for performance and fitness</p> <p><b>A3</b> Best practice for a coach for performance and fitness</p> <p><b>A4</b> Methods of supporting the development of performance and fitness</p> <p><b>A5</b> Technology and sports professionals</p>	<p>A job description for a performance-coaching role that details skills, qualities and best practices of a performance coach.</p> <p>A report reflecting own current coaching performance against the job description.</p>
<b>B</b> Explore practices, adaptations and measures used to develop performance and fitness	<p><b>B1</b> Practices to develop skills and techniques for performance</p> <p><b>B2</b> Practices to develop tactics for performance</p> <p><b>B3</b> Adaptation of practices to promote development of performance and fitness</p> <p><b>B4</b> Measures of performance and fitness</p>	<p>Coaching resources that detail practices, benchmarks and field tests that will develop fitness, skills, techniques and tactics for performance.</p> <p>A report that assesses the practicality, suitability and effectiveness of the practices, suggesting adaptations.</p>
<b>C</b> Demonstrate effective planning of coaching to develop performance and fitness	<p><b>C1</b> Planning considerations</p> <p><b>C2</b> Planning for an individual session for performance and fitness</p> <p><b>C3</b> Planning for an overall series of sessions for performance and fitness</p>	<p>A coaching plan that details safe working coaching practices that will develop performance, reflected in a series of coaching sessions.</p> <p>A video of the delivered coaching session based on the coaching plan.</p>
<b>D</b> Explore the impact of coaching for performance and fitness	<p><b>D1</b> Delivering coaching for performance and fitness</p> <p><b>D2</b> Reflection on session and planned series</p> <p><b>D3</b> Coaching development based on reflection</p>	<p>A report reflecting on the planning, delivery and impact of own coaching performance.</p>



## Content

### Learning aim A: Investigate coaching for performance and fitness

#### A1 Skills and knowledge for coaching for performance and fitness

Learners should understand the skills required for performance and fitness coaching and their application to promote development:

- organisation
- rapport building
- communication: verbal, non-verbal
- diplomacy
- motivation
- knowledge of sports characteristics and demands: technical, tactical, fitness
- knowledge of correct technical and tactical performance models for selected sports
- knowledge of components of fitness for different sports
- knowledge of a range of sports activities to challenge and develop performance, e.g. rules, techniques, practices, adaptations for different conditions
- knowledge of a range of sports adaptations to challenge and develop performance and fitness: space, time, equipment, pace, people, intensity, duration
- planning for changing conditions, e.g. athletes, resources, weather, location, facilities
- planning for progression: technical, tactical, fitness
- maintaining safety in changing conditions, e.g. athletes, resources, weather, location, facilities.

#### A2 Qualities for coaching for performance and fitness

Learners should understand the qualities required for performance and fitness coaching.

- Professionalism:
  - time keeping
  - a positive attitude
  - positive role modelling
  - knowledge
  - proactivity
  - problem solving abilities
  - adaptability
  - empathy
  - approachability
  - personal prep/appearance
  - enthusiasm
  - positivity
  - appropriate levels of confidence
  - reflective skills
  - ability to be analytical and observant
  - ability to be responsive and reactive
  - awareness of individual athlete's ability
  - experience and fitness.

#### A3 Best practice for a coach for performance and fitness

- Safeguarding.
- Disclosure and Barring Service (DBS).
- Equal opportunities.
- Qualifications and continuing professional development (CPD):
  - National Governing Bodies (NGBs)
  - academic.

- Risk assessment of environment and activity.
- Emergency procedures.
- Administration for coaching: register, record keeping, planning and preparation (sessions, series of sessions), insurance, Physical Activity Readiness Questionnaire (PAR-Q), consent to coach.

#### **A4 Methods of supporting the development of performance and fitness**

- Feedback:
  - to groups
  - to individuals
  - on performance: technical, tactical, fitness, effort, intensity
  - hot and cold feedback: during performance, straight after, after reflection.
- Goal setting and SMART (specific, measurable, achievable, realistic, time-bound) targets for individuals and teams:
  - primary and secondary goals
  - process goals
  - outcome/competition goals
  - during the session/training
  - short-/long-term
  - for the season
  - for future development.

#### **A5 Technology and sports professionals**

Learners should understand technologies and sports professionals available to fitness and performance coaches to promote development of the technical, tactical and fitness performance of athletes.

- Supporting technologies:
  - video analysis software, e.g. Coach's Eye, Dartfish®, Kandle
  - electronic training logs, e.g. TrainingPeaks®, Strava™, Runkeeper
  - heart-rate monitors
  - Global Positioning System (GPS) tracking
  - power meters
  - laboratory-based testing, e.g. VO<sub>2</sub> max tests, lactate threshold testing
  - online resources, e.g. specialist websites, forums, video sharing sites and social media.
- The effectiveness, cost, practicality, usability and relevance of technologies for coach and athlete.
- Supporting professionals:
  - sports nutritionist
  - sports masseur
  - physiotherapist
  - chiropractor
  - osteopath
  - sports psychologist
  - strength and conditioning coach.
- The effectiveness, cost, practicality, usability and relevance for coaches and athletes.

## **Learning aim B: Explore practices, adaptations and measures used to develop performance and fitness**

Learners can research the characteristics and demands of their chosen sport, as well as practices and adaptations to promote performance and fitness.

### **B1 Practices to develop skills and techniques for performance**

- Isolated practices.
- Conditioned situations.
- Competitive situations: offensive, defensive.
- Evaluation of practices: practicality, suitability, effectiveness, relevance.

### **B2 Practices to develop tactics for performance**

- Conditioned situations.
- Competitive situations.
- Evaluation of practices: practicality, suitability, effectiveness, relevance.

### **B3 Adaptation of practices to promote development of performance and fitness**

Learners should understand how to adapt practices to replicate the demands of the sport in order to develop performance and competition fitness.

- The participants:
  - size of group
  - role of individuals in practices
  - technique restrictions
  - individual progressions.
- The environment: space, smaller/larger or conditioned/restricted playing areas.
- Equipment:
  - minimal, no equipment
  - use of equipment for different purposes/games.
- Physical fitness demands:
  - intensity
  - duration/distance.
- Psychological demands:
  - introduction of competition pressures, e.g. races, games
  - measured performance, e.g. timed, distance, accuracy
  - advantaging/disadvantaging athlete performance, e.g. head start in a race/game.
- Evaluation of adaptations: practicality, suitability, effectiveness, relevance.

### **B4 Measures of performance and fitness**

Learners should understand measurements of fitness and performance when developing athletes.

- Benchmarks:
  - observation of higher levels of performance, age group, senior or elite
  - national/regional/school/club records
  - class or group measures
  - beginning, during and end of training period.
- Field tests:
  - technical, e.g. accuracy, distance
  - tactical, e.g. notational analysis
  - fitness, e.g. speed, distance, time
  - coach devised, e.g. shot tally, observation analysis
  - standard tests, e.g. Cooper run test, multi-stage fitness test, Illinois agility run test.
- Evaluation of measures: practicality, suitability, effectiveness, relevance.

### **Learning aim C: Demonstrate effective planning of coaching to develop performance and fitness**

Learners will understand how to produce effective coaching plans that will be used to improve the physical performance of an individual.

#### **C1 Planning considerations**

- Information considered prior to planning sessions and series of sessions to develop performance:
  - understanding of athletes and group: number, age, ability/level of performance/level of fitness, individual needs/aims/targets
  - knowledge of environment: community hall/small indoor space, outdoor grassed area, tarmac area, sports hall/large indoor space, public space, private space, shared space
  - knowledge of equipment: minimal, no equipment, use of equipment for different purposes, games to challenge performance
  - selection of skills and techniques for development, knowledge of correct technical models
  - selection of suitable intensities and durations of practices to replicate the demands of the sport
  - setting of clear learning aims and outcomes to develop performance
  - selection of practices to develop performance and fitness and relevant adaptations to challenge/develop individuals
  - differentiation through adaptation of activity
  - consideration of benchmarks and field testing
  - contingency plans.
- Health and safety considerations:
  - athletes and group
  - environment
  - equipment.

#### **C2 Planning for an individual session for performance and fitness**

Could include relevant elements, such as:

- introduction aim/target setting
- equipment and facilities
- warm-up linked to practices
- technique/tactic introduction
- performance analysis and feedback to athletes
- technique/tactic development
- technique/tactic advancement: complexity, difficulty, combination
- conditioned situations
- competitive situations
- adaptations for performance
- cool-down and plenary coach/athlete feedback, reflection on progression towards session aims/targets
- information about the intensity and duration of each practice
- considerations of benchmarks and field testing.

**C3 Planning for an overall series of sessions for performance and fitness**

Planning for a series of sessions, focusing on progression of complexity and refinement of technical and tactical components, and the development of the athletes' fitness.

- Overall aim/target for the series.
- Amount of sessions in series (a minimum of four).
- Schedule of benchmarking and field tests to measure progression.
- Linking sessions to progress and develop during series, which could include:
  - development of different skills and techniques combined to create an end-product performance
  - development of a selected technique
  - development of a tactical application
  - development of relevant fitness components for sport performance.
- Culmination/end product of a series of sessions, which could include:
  - competition, non-competitive
  - repetition of field tests.

**Learning aim D: Explore the impact of coaching for performance and fitness**

Learners will deliver a planned coaching session and reflect on their success and development needs for the future.

**D1 Delivering coaching for performance and fitness**

- Learners are required to coach a performance and fitness session for a sport that could demonstrate:
  - skills of a coach
  - knowledge of a coach
  - qualities of a coach
  - best practice of a coach
  - adaptation of session structure
  - performance analysis
  - relevant feedback to athletes.

**D2 Reflection on session and planned series**

- Reflection on individual session covering:
  - impact of planning considerations on athletes' development towards performance and fitness
  - impact of practices and/or measures on athletes' development towards performance and fitness
  - impact of coaching delivery on athletes' development towards performance and fitness
  - progress towards coaching aims/targets
  - adaptations to planned series sessions
  - health and safety.

**D3 Coaching development based on reflection**

- Personal development recommendations based on reflection on session:
  - skills and knowledge for coaching activities for performance and fitness
  - qualities for coaching activities for performance and fitness
  - best practice for a coach for performance and fitness.
- Individual session development recommendations based on reflection on session:
  - effectiveness of practices and measures
  - appropriateness of practices and measures
  - manageability of practices and measures
  - adaptation of planned series sessions.

## Assessment criteria

Pass	Merit	Distinction
<b>Learning aim A: Investigate coaching for performance and fitness</b>		<b>A.D1</b> Analyse coaching for performance and fitness, and the use of technology and supporting professionals to support athlete development.
<p><b>A.P1</b> Describe coaching for performance and fitness and the methods used to support athlete development.</p> <p><b>A.P2</b> Describe the role technology and professionals may have to support athlete development when coaching for performance and fitness.</p>	<p><b>A.M1</b> Explain coaching for performance and fitness, the methods used to support athletes and the role technology may play in athlete development.</p>	
<b>Learning aim B: Explore practices, adaptations and measures used to develop performance and fitness</b>		<b>B.D2</b> Evaluate the practicality, suitability and effectiveness of practices and measures used to develop athletes when coaching for performance and fitness.
<p><b>B.P3</b> Explain practices and adaptations used to develop athletes when coaching for performance and fitness.</p> <p><b>B.P4</b> Explain measures used to develop athletes when coaching for performance and fitness.</p>	<p><b>B.M2</b> Analyse practices and adaptations used to develop athletes when coaching for performance and fitness.</p> <p><b>B.M3</b> Analyse measures used to develop athletes when coaching for performance and fitness.</p>	
<b>Learning aim C: Demonstrate effective planning of coaching to develop performance and fitness</b>		<b>CD.D3</b> Evaluate the impact of the planning and delivery of the performance and fitness session, justifying adaptations to future sessions and personal coaching developments.
<p><b>C.P5</b> Produce a detailed plan for an individual performance and fitness coaching session that reflects planning considerations and measures, and fits within an overall series plan.</p>	<p><b>C.M4</b> Discuss the interrelationship between own individual plan, planning considerations, measures and the overall series plan.</p>	
<b>Learning aim D: Explore the impact of coaching for performance and fitness</b>		
<p><b>D.P6</b> Deliver the individual performance and fitness session, showing consideration of health and safety factors.</p> <p><b>D.P7</b> Review the delivered performance and fitness session, reflecting on own planning and coaching performance.</p>	<p><b>D.M5</b> Analyse the impact of the planning and delivery of the performance and fitness coaching session, suggesting adaptations to future session and personal coaching developments.</p>	

## Essential information for assignments

The recommended structure of assessment is shown in the unit summary along with suitable forms of evidence. *Section 6* gives information on setting assignments and there is further information on our website.

There is a maximum number of three summative assignments for this unit. The relationship of the learning aims and criteria is:

Learning aim: A (A.P1, A.P2, A.M1, A.D1)

Learning aim: B (B.P3, B.P4, B.M2, B.M3, B.D2)

Learning aims: C and D (C.P5, D.P6, D.P7, C.M4, D.M5, CD.D3)

## Further information for teachers and assessors

### Resource requirements

For this unit, learners must have access to:

- coaching equipment, such as whistle, watch, clipboard
- recording equipment, such as video camera, tablet, voice recorder.

### Essential information for assessment decisions

#### Learning aim A

**For distinction standard,** learners will complete an analysis of the skills, knowledge, qualities and best practice required to deliver coaching for performance and fitness. They will also analyse the use of technology and supporting professionals to support athlete development. Learners will include practical examples to support the analysis, and these can be drawn from coaching activities or relevant life experiences. Within their analysis, learners will identify clear reasons for the inclusion of each element and how they sit within coaching for performance and fitness sessions.

**For merit standard,** learners will explain the skills, knowledge, qualities and best practice required to deliver coaching for performance and fitness, and selected methods used to help support developing athletes. They will also detail the role technology may play in supporting athlete development, giving examples to support their points. They will complete this explanation by breaking down coaching situations and the requirements of a performance coach to study and make judgements on the impact of the methods and technology.

**For pass standard,** learners will discuss the skills, knowledge, qualities and best practice required by a performance and fitness coach, detailing the methods and technology they may use to support the development of athletes. Examples of coaching and fitness sessions could be used to illustrate and support discussion points.

#### Learning aim B

**For distinction standard,** learners will evaluate the practicality, suitability, effectiveness and relevance of the practices and measures, making judgements on the advantages and disadvantages of each. They will then make recommendations, derived from the advantages and disadvantages, for adaptations to meet the differing performance and fitness needs of individual athletes or teams. Learners will justify the relevance or significance of each adaptation in relation to coaching for performance and fitness.

**For merit standard,** learners will analyse coaching practices and the practicality, suitability and effectiveness of each. Learners will also detail how each practice is designed to develop/promote an individual athlete or team's skills, as well as their technical and tactical performance. They will support their analysis with examples of the practicality, suitability and effectiveness of each practice. They will also analyse measurements used to develop athletes and give examples to support their points.

**For pass standard,** learners will explain coaching practices that develop an individual athlete or team's skills, as well as their technical and tactical performance. They will breakdown each of the practices, giving clear details to show that they understand the functions and objectives of each. Learners will also explain the different types of measurements coaches may use to help track and monitor performance, giving examples of how they may support an athlete's development.



## Learning aims C and D

In achieving learning aim C and D, learners must prepare a plan for the management of a coached session to improve performance and fitness, engage in planned activities and evaluate the effectiveness of the activity.

In completing the assessment tasks for these learning aims, learners will independently select, apply and demonstrate appropriate knowledge and skills from other units, such as:

- *Unit 2: Functional Anatomy*: structure, characteristics and function of the anatomical systems in the context of their effectiveness in producing sport and exercise movements; anatomical systems and how they interrelate in order to carry out different exercise and sporting movements.
- *Unit 3: Applied Sport and Exercise Psychology*: psychological factors, concepts, interventions and theories in sport and exercise activities and the introduction of competition pressures.
- *Unit 5: Applied Research Methods in Sport and Exercise Science*: the effective application of research skills including validity, ethical issues, and quantitative and qualitative data analysis.

**For distinction standard**, learners will evaluate the impact of their planning and coaching for performance and fitness on the athlete and/or team. The evaluation will detail strengths and weaknesses and how each one has contributed towards athlete and/or team performance and fitness during and after the session. During the evaluation, it is essential that learners reflect on the session delivered and their own coaching performance, as well as the impact on their own performance. They will draw on valid information from the planning and delivery of sessions to support their conclusions. Learners will use the knowledge gained from *Unit 2: Functional Anatomy*, and *Unit 5: Applied Research Methods in Sport and Exercise Science* to effectively evaluate coaching and its impact on fitness when planning and delivering sessions.

Learners will justify how they could develop their planning and personal coaching abilities for future coaching sessions, suggesting actions to achieve these goals (for example, coaching courses). Knowledge gained from *Unit 3: Applied Sport and Exercise Psychology* will support learners in planning sessions using goal-setting techniques. Learners are required to justify the relevance or significance of each action to their personal development as a performance coach.

**For merit standard**, learners will discuss the interrelationship between their individual plan, planning consideration and an overall series plan. The discussion will consider how each element may contribute to development in performance and how they interact with each other in a holistic approach to athlete and/or team progression. Learners will analyse their delivered coaching session by breaking down the session plan and their coaching performance to interpret and study the interrelationship between them and the impact of each one. Learners will be able to draw upon their knowledge of *Unit 5: Applied Research Methods in Sport and Exercise Science* to use appropriate approaches and methods to interpret the breakdown of their coaching performance.

On completion of the planning and delivery phase, learners will complete an analysis of their coaching performance. This analysis will include reflection on the impact that their personal performance as a coach and the series and session plans has had on the performance of the athletes, and how the session and its outcomes relate to the planning and whole session series. To aid analysis, learners should make a recording of the session.

**For pass standard**, learners will produce a detailed session plan that includes relevant practices targeting improvement in performance through the development of skills, techniques and tactics for either an individual athlete or a team. Learners will reflect on key planning considerations and how the session fits into an overall plan for a series of progressive sessions aimed at developing performance. This can be evidenced through the production of an overall series plan (for example, a scheme of work), previous/future session plans or written evidence of previous learning and planned future progressions. Learners will safely and independently deliver the planned session. Evidence of delivery can be through a video recording of the session, which can also support their review process. By selecting appropriate knowledge from *Unit 5: Applied Research Methods in Sport and Exercise Science* learners will be able to provide evidence using suitable methods to assess performance.

Learners will complete a review of their delivered coaching session, making an assessment of their planning and coaching performance. The review will include evidence of learners reflecting on their personal performance as a coach and their planning for the session. By selecting appropriate knowledge from *Unit 3: Applied Sport and Exercise Psychology* learners will be able to provide evidence for a review of their own individual coaching performance. Evidence of delivery and review can be through written documents or a video recording of the session/review.

### **Links to other units**

This unit brings together the skills, knowledge and understanding from other units studied across the qualification.

### **Employer involvement**

Centres can involve employers in the delivery of this unit if there are local opportunities to do so. There is no specific guidance related to this unit.

# Unit 7: Biomechanics in Sport and Exercise Science

Level: **3**

Unit type: **Internal**

Guided learning hours: **60**

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## Unit in brief

This unit examines human movement, the movement of sporting objects, forces that the human body produces and forces that act on it in sport and exercise environments.

## Unit introduction

An understanding of biomechanics is essential for coaches who need to analyse the forces in action in a sport or exercise activity, and how they impact on performers and affect their performance. You will be able to answer questions such as, 'Why do tennis balls and cricket balls spin?', 'What is the optimal angle to release a javelin?' and 'What clothing and footwear are most appropriate to prevent injury?'. Biomechanics is one of the central subjects in sport science because all sport and exercise activities involve movement. Biomechanics seeks to describe and analyse human movement and to apply scientific principles in order to improve sporting performance.

In this unit, you will gain an understanding of the types of motion that the human body undertakes in sport and the forces that impact on the human body, such as reaction forces, friction and buoyancy. You will examine concepts that explain what happens when the body or sporting objects move through air – for example, principles of aerodynamics, drag and lift – and the key role that centre of mass plays in maintaining the stability of the body. The application of this knowledge to practical situations is particularly important, as it will enable you to become a more effective coach, instructor or sports performer.

This combination of knowledge, understanding and skills will help to prepare you for higher education courses in the sport and exercise science sector, and for supporting individual athletes or teams.

## Learning aims

In this unit you will:

- A** Investigate linear motion in sport and exercise activities
- B** Examine forces acting on sports performers and their equipment
- C** Investigate angular motion in sport and exercise activities.

## Summary of unit

Learning aim	Key content areas	Recommended assessment approach
<b>A</b> Investigate linear motion in sport and exercise activities	<b>A1</b> Linear motion <b>A2</b> Speed and velocity <b>A3</b> Acceleration and deceleration <b>A4</b> Inertia and momentum	A portfolio that details an investigation into linear motion in sport and exercise science.
<b>B</b> Examine forces acting on sports performers and their equipment	<b>B1</b> Newton's three laws of motion <b>B2</b> Reaction forces <b>B3</b> Friction <b>B4</b> Air resistance <b>B5</b> Aerodynamics <b>B6</b> Lift and Bernoulli's principle	A report that examines the forces acting on sports performers and their equipment.
<b>C</b> Investigate angular motion in sport and exercise activities	<b>C1</b> Centre of mass <b>C2</b> Centre of mass and stability <b>C3</b> Levers <b>C4</b> Axes of rotation	A presentation that details an investigation into angular motion in sport and exercise activities.

## Content

### Learning aim A: Investigate linear motion in sport and exercise activities

#### A1 Linear motion

Understand types of linear motion and how they explain movement in sports activities.

- Linear motion:
  - movement of a body or object in a straight line
  - rectilinear and curvilinear motion.
- Vector and scalar quantities:
  - vector quantities are described in terms of size and direction
  - scalar quantities are described only in terms of size.
- Vector and scalar quantities may include:
  - mass describes the amount of matter a body possesses in kg and is a scalar quantity
  - weight is the effect gravity has on the mass of a body in N and is a vector quantity.

#### A2 Speed and velocity

Understand the difference between the speed and velocity of sports bodies and objects, and how to calculate them using sporting examples.

- Distance and displacement:
  - distance describes how far a body or object has moved
  - displacement considers how far a body or object has moved in relation to its starting position.
- Speed:
  - a scalar quantity measured in metres/second (m/s)
  - considers the distance a body or object has travelled
  - calculated by dividing distance covered in metres by the time taken in seconds
  - calculate speed in sporting situations, e.g. average speed of a sprinter or speed during each 10 m segment of a 100 m race.
- Velocity:
  - a vector quantity measured in metres/second (m/s)
  - considers the displacement of a body or object
  - calculated by dividing displacement in metres by the time taken in seconds
  - calculate velocity in sporting situations, e.g. compare velocity of a sprinter over distances of 100 m and 400 m.

#### A3 Acceleration and deceleration

Understand acceleration and deceleration and how to calculate these using sporting examples.

- Definition: a measure of how quickly velocity changes over a set period of time.
- Calculating acceleration and deceleration:
  - velocity at the end of the time period minus velocity at the start of the time period divided by the length of the time period
  - acceleration and deceleration are measured in metres/second (m/s)
  - acceleration will be a positive figure and deceleration a negative figure
  - calculate acceleration and deceleration in practical situations.

#### A4 Inertia and momentum

Understand inertia and momentum and how to calculate momentum using sporting examples.

- Definitions and description:
  - inertia is the tendency of a body to resist a change in its state of motion
  - the greater the mass of an object the greater its inertia
  - momentum is the quantity of motion that a body or object possesses
  - momentum is a vector quantity that is the product of its mass and velocity.

- Calculation of momentum:
  - momentum is calculated by multiplying a body's mass (kg) by its velocity (m/s)
  - momentum is measured in kg m/s
  - calculate momentum in practical situations, e.g. moving objects, moving bodies.

## **Learning aim B: Examine forces acting on sports performers and their equipment**

### **B1 Newton's three laws of motion**

Understand Newton's three laws of motion and their application to sport and exercise.

- Newton's first law of motion – law of inertia: a body will maintain a state of rest or constant velocity unless acted on by an external force that changes its state.
- Newton's second law of motion – law of acceleration: a force applied to a body causes acceleration of that body of a size proportional to the force, in the direction of the force and inversely proportional to the body's mass.
- Newton's third law of motion – law of reaction: when one body exerts a force on a second body, the second body exerts a reaction force equal in magnitude and opposite in direction on the first body.
- Application of Newton's three laws to sport and exercise situations:
  - applying forces to stationary sporting objects
  - striking balls and other sporting objects
  - collisions in sport between bodies and objects.

### **B2 Reaction forces**

Understand forces and how they impact on sport and exercise activities.

- Force:
  - a push or pull exerted on a body that will tend to change its state of motion
  - measured in Newtons (N).
- Ground reaction force:
  - its magnitude is dependent on the mass of the body and the gravity acting on this mass
  - ground reaction force is equivalent to the force exerted downwards by the body
  - effect of the changes in reaction forces in sporting situations.
- Action and reaction forces:
  - examples of action and reaction forces in sports, e.g. kicking and throwing objects, pushing off the ground.
- Impact on sport and exercise activities:
  - production of forces to move the body and sporting objects.

### **B3 Friction**

Understand friction and its implications for performance in sport and exercise activities.

- Definition: a force acting when two surfaces come into contact with each other.
- Types of friction: static, rolling and sliding friction.
- Coefficient of friction:
  - a unit-less number representing the relative ease of sliding between two surfaces
  - factors affecting the coefficient of friction (relative hardness and roughness of surfaces).
- Implications of frictional forces for sports performance:
  - design of sports clothing to minimise friction
  - friction between tyres and the road surface.

### **B4 Air resistance**

Understand air resistance and its effect on sport and exercise activities.

- Definition:
  - the force that acts on a body moving through air in the opposite direction to its direction of travel

- caused by the molecules that make up air making contact with the surface of the moving body
- also referred to as drag.
- Effect of air resistance on projectiles:
  - parabolic, nearly parabolic and asymmetric flight paths
  - forces acting on a projectile during flight (weight and air resistance).
- Implications and effect of air resistance for the design of sports equipment and clothing:
  - streamlining
  - examples from cycling, running and swimming.

### **B5 Aerodynamics**

Understand aerodynamics and its implications for performance in sport and exercise activities.

- Definition: how air flows around an object.
- Factors affecting speed of flow around an object:
  - speed of movement
  - shape of object
  - nature of the object's surface.
- Types of flow:
  - laminar flow (air flows in parallel lines around an object)
  - turbulent flow (air flows in a violent, mixed-up way)
  - impact of turbulence on moving bodies and objects.
- Implications of turbulence for sports performance:
  - drafting in cycling, running and motor racing
  - design of cricket and golf balls.

### **B6 Lift and Bernoulli's principle**

Understand lift and how it impacts on sports activities.

- Definition:
  - an upward force that is caused by air flowing at different speeds above and below an object
  - also referred to as Bernoulli's principle.
- Factors affecting lift:
  - shape of the object
  - angle at which it is positioned.
- Magnus effect:
  - application of Bernoulli's principle to spinning objects
  - contact between air molecules at the boundary layer and the air flow
  - creates a pressure differential and a Magnus force causing an object to deviate from its course.
- Bernoulli's principle and impact on sports performance:
  - effect on flight of projectiles (discus, shot)
  - optimum angle of take-off for ski jumpers and long jumpers
  - design of aeroplane wings and aerofoil in Formula 1 racing
  - applying spin to tennis and cricket balls
  - applying spin to a football to enable it to move in the air.

## **Learning aim C: Investigate angular motion in sport and exercise activities**

### **C1 Centre of mass**

- Definition:
  - the point through which gravity acts on an object
  - the point where there is an equal weight force on both sides
  - also referred to as centre of gravity.

- Location of the centre of mass:
  - symmetrical shapes (e.g. balls)
  - asymmetrical shapes (e.g. human body)
  - movement of the centre of mass in response to the movement of the human body.
- Impact of location of centre of mass on sports performance:
  - manipulation of centre of mass during jumping events
  - changes in position of centre of mass to maintain balance in sport.

## **C2 Centre of mass and stability**

Understand the relationship between centre of mass and stability and its application in sport and exercise activities.

- Relationship between centre of mass and stability: stability is dependent on the location of the centre of mass.
- Factors affecting the centre of mass of a human body:
  - height
  - weight
  - position of limbs in relation to the body
  - width of base of support
  - posture.
- Manipulation of centre of mass to improve sports performance:
  - techniques in high jumping and gymnastics
  - foot placement in running/sprinting
  - stance in boxing and martial arts.

## **C3 Levers**

Understand different types of levers and apply them to sport and exercise examples.

- Functions of levers:
  - increase the resistance that any given effort can move
  - increase the speed the body moves at
  - increased mechanical advantage.
- Types of levers:
  - first class
  - second class
  - third class
  - dependent on the relationship between fulcrum, effort and load.
- Turning effects:
  - moment of force/torque
  - calculated by magnitude of the force multiplied by length of moment arm.

## **C4 Axes of rotation**

- Description of axes: axes of rotation describe the axes around which the body can rotate.
- Principle axes:
  - longitudinal (runs through the body from the top to the bottom)
  - mediolateral (runs through the body from side-to-side)
  - anteroposterior (runs through the body from the front to the back).
- Movement in each axis of rotation:
  - longitudinal – ice skater spinning
  - mediolateral – diver performing a front somersault
  - anteroposterior – gymnast performing a cartwheel.



## Assessment criteria

Pass	Merit	Distinction
<b>Learning aim A: Investigate linear motion in sport and exercise activities</b>		<b>A.D1</b> Analyse speed, velocity, acceleration, deceleration and momentum using relevant calculations from sport and fitness contexts.
<b>A.P1</b> Describe speed, velocity, acceleration, deceleration and momentum in sport and exercise contexts.	<b>A.M1</b> Explain speed, velocity, acceleration, deceleration and momentum in sport and exercise contexts.	
<b>Learning aim B: Examine forces acting on sports performers and their equipment</b>		<b>B.D2</b> Analyse, using examples, how forces impact on sport and exercise performance.
<b>B.P2</b> Describe how forces impact on sport and exercise performance referencing Newton's three laws of motion.	<b>B.M2</b> Explain how forces impact on sport and exercise performance referencing Newton's three laws of motion.	
<b>Learning aim C: Investigate angular motion in sport and exercise activities</b>		<b>C.D3</b> Analyse how different types of levers and changes in the centre of mass combine to affect performance in sport and exercise activities.
<b>C.P3</b> Describe how different types of levers and axes of rotation are used in sport and exercise activities.	<b>C.M3</b> Explain how different types of levers and axes of rotation are used to complete different movements.	
<b>C.P4</b> Describe how changes in the centre of mass affect performance in sport and exercise activities.	<b>C.M4</b> Explain how changes in the centre of mass affect performance in sport and exercise activities.	

## Essential information for assignments

The recommended structure of assessment is shown in the unit summary along with suitable forms of evidence. *Section 6* gives information on setting assignments and there is further information on our website.

There is a maximum number of three summative assignments for this unit. The relationship of the learning aims and criteria is:

Learning aim: A (A.P1, A.M1, A.D1)

Learning aim: B (B.P2, B.M2, B.D2)

Learning aim: C (C.P3, C.P4, C.M3, C.M4, C.D3)

## Further information for teachers and assessors

### Resource requirements

There are no specific additional requirements for this unit.

### Essential information for assessment decisions

#### Learning aim A

**For distinction standard,** learners will analyse speed, velocity, acceleration and deceleration in detail. They will breakdown motion in sport and exercise activities into their component parts, showing changes in each type of linear motion. Learners should be able to calculate each type of linear motion and show the relationships between the different types. Both activities will be analysed in detail, demonstrating a clear understanding of the principles of linear motion as applied to sport and fitness activities.

**For merit standard,** learners will provide explanations of each type of linear motion. They will use practical examples to identify where each type of linear motion is occurring and offer an associated explanation for each example. They will show that they understand the functions and objectives of motion, and clearly differentiate between the different types of linear motion as well as making connections between them.

**For pass standard,** learners will give an account of each of the types of linear motion and provide basic information about how they apply to their selected sport and fitness activities. Learners should give specific examples of the types of linear motion present in their selected sport and exercise activities and differentiate accurately between each type. There may be an imbalance between the amounts of detail provided on each activity, where one has been dealt with in more detail than the other.

#### Learning aim B

**For distinction standard,** learners will analyse in detail how reaction forces, friction forces, air resistance and aerodynamics impact on sports performers and sports equipment by breaking down sport and exercise activities to show exactly how the forces are acting. They will examine how the negative and positive impact of forces can be manipulated to promote optimal sports performance and make connections between the impact of forces and the design of sports clothing and equipment. Both activities will be analysed in detail, demonstrating a clear understanding of the action and impact of forces as applied to sport and fitness activities, and the interrelationships between the different forces.

**For merit standard,** learners will show that they understand Newton's three laws of motion by identifying examples of where each law is in action and providing an expansion of how each law is being applied. They will provide explanations of how each force acts on sport and exercise performers and their equipment. They will use practical examples to identify where each force is acting and offer an associated explanation for each example. They will clearly differentiate between different forces and make connections between them.

**For pass standard,** learners will use sport and exercise examples to show how Newton's three laws of motion can be seen to be acting on either the motion of sports performers or their equipment. They will give an account of the different forces that act on sports performers and their equipment, and provide basic information about how they apply to their selected sport and fitness activities. There may be an imbalance between the amounts of detail provided on each of the forces covered and their chosen sport and exercise activities, where one has been dealt with in more detail than the other.

## Learning aim C

**For distinction standard,** learners will analyse in detail the impact of changes in the centre of mass and breakdown sport and exercise activities into their component parts, showing how the centre of mass of a body is affected by changes in its shape and position. They will analyse the relationship between the position and movement of different types of levers on the location of the centre of mass and the stability of the body. They will analyse the selected activity in detail, demonstrating a clear understanding of the principles of centre of mass and different types of levers as applied to sport and fitness activities.

**For merit standard,** learners will provide explanations of each of the types of lever and axes of rotation. They will use practical examples to identify where different types of levers are producing movement, and where there is movement in each of the axes of rotation, and offer an associated explanation for each example. They will identify examples where changes in the centre of mass affect performance and offer an associated explanation of the impact of this change in position.

**For pass standard,** learners will give an account of each of the types of lever and axes of rotation, and provide basic information about how they apply to their selected sport and fitness activity. They will give examples of specific movements produced by each type of lever present in their selected sport and exercise activity, and differentiate accurately between the different types. Learners will provide examples of movement of the body through each of the axes of rotation in their selected sport and exercise activity, and differentiate accurately between movements in each axis. They will give an account of the location of the centre of mass of sporting objects, and how the centre of mass of the human body changes as its position changes.

## Links to other units

This unit links to:

- Unit 1: Sport and Exercise Physiology
- Unit 2: Functional Anatomy
- Unit 5: Applied Research Methods in Sport and Exercise Science
- Unit 6: Coaching for Performance and Fitness
- Unit 9: Research Project in Sport and Exercise Science
- Unit 11: Sports Massage
- Unit 14: Technology in Sport and Exercise Science
- Unit 15: Sports Injury and Assessment.

## Employer involvement

Centres may involve employers in the delivery of this unit if there are local opportunities. There is no specific guidance related to this unit.

# Unit 8: Specialised Fitness Training

Level: **3**

Unit type: **Internal**

Guided learning hours: **60**

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## Unit in brief

Learners study specialised fitness training and the physical demands of sports to plan training of periodised programmes and training sessions to improve sports performance.

## Unit introduction

The fitness training industry is booming with both sporting and non-sporting people going to gyms and engaging with trainers or fitness coaches. Sports coaches and athletes are always striving for the marginal gains that will lead to improved performance and success. Specialised fitness training provides the tools and framework to identify the key performance factors and target fitness training programmes for an athlete's improvement.

You will explore the fitness requirements, physical characteristics and demands of sports that contribute to effective training and sports performance. You will then investigate methods of training for physical and skill-related fitness that will improve this performance. You will then examine the principles that underpin the design of periodised training programmes and training sessions. Finally, you will carry out the planning of programmes and training sessions for a chosen sport.

This unit will prepare you for progression to higher education or a career in sport coaching or the fitness industry, by developing your skills of interpretation and presentation of information, as well as the analysis and understanding of sports training and performance.

## Learning aims

In this unit you will:

- A** Examine the fitness requirements, physical characteristics and demands of sport that contribute to effective training and performance
- B** Investigate methods of training for physical and skill-related fitness
- C** Explore the planning of fitness programming.

## Summary of unit

Learning aim	Key content areas	Recommended assessment approach
<b>A</b> Examine the fitness requirements, physical characteristics and demands of sport that contribute to effective training and performance	<b>A1</b> Characteristics of sport <b>A2</b> Fitness demands of sports <b>A3</b> Movement patterns <b>A4</b> Energy systems and expenditure <b>A5</b> Importance and influence on training programme design	A report that evaluates how the planning of an athlete's training is influenced by the fitness demands, characteristics and movement patterns of the sport they perform.
<b>B</b> Investigate methods of training for physical and skill-related fitness	<b>B1</b> Training for physical fitness <b>B2</b> Training for skill-related fitness <b>B3</b> Effectiveness and suitability of training methods for athletes' goals	A report that evaluates the effectiveness of methods of training used to improve physical and skill-related fitness, justifying their contribution to improving performance in a chosen sport.
<b>C</b> Explore the planning of fitness programming	<b>C1</b> Collecting personal information to aid programme design <b>C2</b> Principles of training and their application to training programming <b>C3</b> Designing periodised training programmes <b>C4</b> Planning training sessions <b>C5</b> Evaluating the effectiveness of programming and training plan design	A report that evaluates the effectiveness of a training programme and associated training plan, supported by the production of a periodised training programme and a training plan for a selected aspect of the periodised training programme.

## Content

### Learning aim A: Examine the fitness requirements, physical characteristics and demands of sport that contribute to effective training and performance

Learners must understand how the fitness demands and physical characteristics of a sport can affect the design of training programmes.

#### A1 Characteristics of sport

- Characteristics of single performance:
  - duration, e.g. short, long, sustained; seconds, minutes, hours, days
  - extent and influence of contact/impact, e.g. rugby, judo, boxing
  - recovery periods, during or in between performances.
- Types of activity, for example:
  - multi-sprint activity, e.g. football, rugby, netball or hockey
  - skills-based activities
  - multi-discipline, e.g. decathlon, modern pentathlon, triathlon
  - fitness-based (endurance, strength, power), e.g. marathon running, open-water swimming, weight lifting.
- Characteristics of athletes' performance cycle:
  - types of competition, e.g. tournaments, one-off performances, leagues
  - repetition and frequency of performance, e.g. heats, fixtures.

#### A2 Fitness demands of sports

- Cardiovascular endurance.
- Strength (isometric, isotonic).
- Localised muscular endurance.
- Explosive power.
- Speed.
- Agility.
- Balance and proprioception.
- Sustained anaerobic exercise (anaerobic power, speed endurance).
- Flexibility.
- Reaction time.

#### A3 Movement patterns

Learners must understand the different movement patterns and role of body parts as relevant to their chosen sport.

- Interaction of body parts:
  - arms/upper body – relationship to the core, reach, range of movement, bilateral or one sided
  - legs/lower body – relationship to the core, reach, range of movement, bilateral or one sided
  - core – base, centre of all movement, posture, dynamic during performance, static during performance, core's effect on balance.
- Movement patterns as relevant to the sport:
  - sustained repeated movements, e.g. running, jogging, walking
  - changes of direction
  - pre-programmed movements
  - reactive movements.

#### A4 Energy systems and expenditure

- Aerobic or anaerobic energy production.
- Energy expenditure.

**A5 Importance and influence on training programme design**

Influence of factors on fitness training programme design, including:

- time
- injury prevention
- performance outcomes
- pre-season/post-season
- manager requirements, e.g. to fulfil a role in a team
- personal/team/position goals, e.g. strength in scrum.

**Learning aim B: Investigate methods of training for physical and skill-related fitness**

Learners must understand the different methods for physical fitness training and skill-related fitness training and how methods are used in a programme to enhance performance.

**B1 Training for physical fitness**

- Flexibility:
  - definition of flexibility
  - functions of flexibility, e.g. prevention of injury, aesthetics, production of power
  - methods of training flexibility – static flexibility training (active and passive), ballistic, proprioceptive neuromuscular facilitation (the hold-relax technique, the hold-relax-contract technique, the hold-relax-swing technique)
  - effectiveness of training methods used to improve flexibility.
- Strength:
  - definitions of strength (maximum strength, core stability, strength endurance/muscular endurance)
  - functions of strength, e.g. posture, joint integrity, stability, force production
  - methods of strength training – traditional (repeated bouts of repetitions against resistance with adequate rest on stable surfaces), core stability (repeated bouts of repetitions with adequate rest on unstable surfaces), circuit training, complex training
  - types of strength exercise (compound exercises, isolated exercises)
  - strength and conditioning equipment, e.g. free weights, fixed resistance machines, gravity-based machines, elastic resistance, calisthenics, body weight, plyometric, rowing machines, turbo trainers
  - effectiveness of training methods used to improve strength.
- Cardiovascular endurance:
  - definitions of cardiovascular endurance (aerobic endurance, anaerobic endurance)
  - functions of cardiovascular endurance, e.g. stamina, sustained performance, speed of recovery, intensity of training
  - methods of training for cardiovascular endurance (continuous training, interval training, Fartlek training).

**B2 Training for skill-related fitness**

- Agility:
  - definition of agility
  - function of agility, e.g. change of direction, losing an opponent, creating space
  - methods of agility training (Speed, Agility and Quickness (SAQ®) training, agility ladders, shuttle runs).
- Speed:
  - definitions of speed (acceleration, ability to cover given distance, ability to move limbs quickly)
  - functions of speed, e.g. change of pace, cadence, acceleration
  - methods of speed training (acceleration sprints, hill sprints, overspeed training).



- Balance and proprioception:
  - definitions of balance and proprioception
  - function of balance and proprioception, e.g. limitation of agility and co-ordination, limitation of power, aesthetics
  - methods of balance and proprioception training (wobble balance-board exercises, e.g. press-ups, lunges, side plank and single-leg standing using the balance board; gait exercises, e.g. one-leg balance, heel-to-toe walking and hip-stabilising exercises; weighted ball exercises, e.g. medicine ball catching and throwing).
- Power and reaction time:
  - definitions of power and reaction time
  - function of power and reaction time
  - methods of training power and reaction time (compound free weights exercises to establish base strength, e.g. squats, lunges, calf raises and bicep curls; plyometric training to develop explosiveness, e.g. lunging, bounding, incline press-ups, barrier hopping and jumping; reaction speed drills specific to athlete's sport, e.g. to control an object, to react to a specific command (voice, starting pistol).

### **B3 Effectiveness and suitability of training methods for athletes' goals**

- The effectiveness of training methods used to improve physical and skill-related fitness in line with desired goals.
- Suitability of training methods for desired training goals, e.g. to support recovery, to aid progression, to counteract opposition tactics.

## **Learning aim C: Explore the planning of fitness programming**

### **C1 Collecting personal information to aid programme design**

- Personal goals:
  - shortterm (set over a short period of time, between one day and one month)
  - medium-term (should give progressive support towards achievement of long-term goals)
  - long-term (what they want to achieve in the long term, and the best way of doing this).
- Aims (details of what they would like to achieve).
- Objectives (how they intend to meet their aims).
- Lifestyle and physical activity history.
- Medical history questionnaire, Physical Activity Readiness Questionnaire (PAR-Q).
- Attitudes towards training and personal motivation for training.
- Gathering and interpreting fitness testing data to establish baseline as well as comparison to benchmarks and normative data.

### **C2 Principles of training and their application to training programming**

- Specificity: training should be specific to personal sport, activity or physical/skill-related fitness goals to be developed.
- Progressive overload: in order to progress, the training needs to be demanding enough to cause the body to adapt, improving performance. This can be done by increasing frequency, intensity, or time, or by reducing recovery times. Not all these methods should be used at once or the increase in workload will be too much.
- FITT principle (frequency, intensity, time and type): in order to achieve progressive overload, the FITT principle should be applied in a way that ensures that progressive overload can be achieved without significantly risking injury as a result of fatigue.
- Reversibility: if training stops, is not frequent enough or the intensity of training is not sufficient to cause adaptation, training effects are reversed.
- Variation: vary the personal training regime to avoid boredom and maintain enjoyment.
- Individual differences/needs: the programme should be designed to meet the needs and requirements of the sport as well as the personal information collected.
- Rest and recovery.
- Adaptation.

### **C3 Designing periodised training programmes**

- Use of personal information and fitness testing data to aid training programme design.
- Performance cycle:
  - event identification
  - event prioritisation
  - goal identification
  - setting SMART targets
  - calendar phases, the purpose and duration of each phase (preparation, pre-competition, competition/tapering, recovery)
  - cycles, the purpose and duration of each cycle (macrocycle/mesocycle/microcycle).
- Application of the principles of training in the planning of the training programme:
  - selection of appropriate methods of training to improve fitness in line with personal information, fitness testing data and identified needs of the sport
  - appropriate application of the FITT principle.
- Schedule for fitness testing in order to monitor progress at key points of the programme.

### **C4 Planning training sessions**

- Safe design of session.
- Appropriate activities for warm-up (light, continuous physical activity to prepare the body for exercise, mobilisation exercises, dynamic/PNF stretching to increase range of motion).
- Selection of appropriate combination of exercises to suit the methods of training.
- Selection of appropriate activities for cool-down (light, continuous physical activity to reduce heart rate, remove lactic acid and prevent blood pooling; static stretching to maintain range of motion).
- Selection of training intensities to suit methods of training, e.g. loading, repetitions, sets.
- Selection of training durations to suit methods of training (individual exercises, session).
- Selection of suitable equipment and facilities to ensure safe training.
- Ways of monitoring intensity, e.g. heart rate monitors, rating of perceived exertion (RPE), training thresholds.

### **C5 Evaluating the effectiveness of programming and training plan design**

- Practicality of the planned training.
- Effectiveness of:
  - methods of training
  - exercises in relation to the demands of the sport
  - intensities and duration of the exercises
  - scheduling of session in the periodised programme in relation to the identified events.
- Suggested adaptations to plan:
  - alternative methods of training
  - alternative exercises in relation to the demands of the sport
  - adaptation to selected intensities and duration of the exercises
  - alternative scheduling of the session in the periodised programme in relation to the identified events.

## Assessment criteria

Pass	Merit	Distinction
<b>Learning aim A: Examine the fitness requirements, physical characteristics and demands of sport that contribute to effective training and performance</b>		<b>A.D1</b> Evaluate how the fitness demands, characteristics and movement patterns of the sport influence the planning of an athlete's training.
<b>A.P1</b> Explain how the fitness demands, characteristics and movement patterns of the sport influence the planning of an athlete's training.	<b>A.M1</b> Analyse how the fitness demands, characteristics and movement patterns of the sport influence the planning of an athlete's training.	
<b>Learning aim B: Investigate methods of training for physical and skill-related fitness</b>		<b>B.D2</b> Evaluate the effectiveness of methods of training used to improve physical and skill-related fitness, justifying how they contribute to enhance performance in a chosen sport.
<b>B.P2</b> Explain methods of training and their effectiveness in improving physical fitness for a chosen sport.	<b>B.M2</b> Analyse methods of training and their effectiveness in improving physical fitness for a chosen sport.	
<b>B.P3</b> Explain methods of training and their effectiveness in improving skill-related fitness for a chosen sport.	<b>B.M3</b> Analyse methods of training and their effectiveness in improving skill-related fitness for a chosen sport.	
<b>Learning aim C: Explore the planning of fitness programming</b>		<b>C.D3</b> Evaluate the effectiveness of the training programme towards enhancing sports performance, making justified suggestions for adaptations or alternative methods of training.
<b>C.P4</b> Explain the principles of training to be considered when planning for periodised training and fitness programming.	<b>C.M4</b> Analyse the design of the training session plan as part of the periodised training programme.	
<b>C.P5</b> Produce a detailed periodised training programme to improve performance for a chosen sport.		
<b>C.P6</b> Produce a detailed training session plan for a selected aspect of the periodised training programme.		

## Essential information for assignments

The recommended structure of assessment is shown in the unit summary along with suitable forms of evidence. *Section 6* gives information on setting assignments and there is further information on our website.

There is a maximum number of three summative assignments for this unit. The relationship of the learning aims and criteria is:

Learning aim: A (A.P1, A.M1, A.D1)

Learning aim: B (B.P2, B.P3, B.M2, B.M3, B.D2)

Learning aim: C (C.P4, C.P5, C.P6, C.M4, C.D3)

## Further information for teachers and assessors

### Resource requirements

For this unit, learners must have access to suitable fitness training facilities and equipment, for example a sports hall, studio gym or sports lab with appropriate training equipment, such as fixed resistance machines, free weights, CV machines, cones, mats, benches, timing gates, stopwatch. Learners may also require access to more specific equipment for some skill-related training activities, such as SAQ ladders and hurdles, wobble balance boards or training chutes. Learners will also require access to suitable individuals who can act as training programme subjects.

### Essential information for assessment decisions

#### Learning aim A

For learning aim A, learners must choose a specific sport to study. The sport can be either individual or team-based. They must explore the fitness demands, characteristics and movement patterns of that specific sport when considering the influence(s) on the planning of training.

**For distinction standard,** learners will consider the fitness demands, characteristics and movement patterns of a specific sport, exploring the relevance and significance of each. They will draw conclusions about the influence that each aspect has on the planning of training for an athlete performing that sport. Learners will include specific examples in their work to support their conclusions. They will use appropriate terminology and provide examples to illustrate their points.

**For merit standard,** learners will present the outcome of a detailed and methodical examination into the influence that the characteristics, demands and movement patterns of a specific sport have on the planning of training for an athlete. They will break down the requirements above in order to interpret and study the interrelationships between them. Learners will provide appropriate examples to support their analysis and will use appropriate terminology.

**For pass standard,** learners will give a detailed account of the demands, characteristics and movement patterns of the chosen sport along with reasons and/or evidence to support the influence that these aspects have on the planning of an athlete's training. They will include appropriate examples to support their conclusions.

#### Learning aim B

For learning aim B, learners could use the same sport that was covered in learning aim A. They must identify three methods of training to satisfy the components of physical fitness and at least three methods to satisfy the skill-related components of their chosen sport. The sport can be either individual or team-based.

**For distinction standard,** learners will consider the advantages, disadvantages and relevance of methods of training for physical and skill-related fitness components in order to make judgements on their effectiveness. They will draw conclusions that are supported by examples, justifying how the methods contribute to the enhanced performance in a chosen sport. Learners suggest ways in which training methods may be adapted to maximise the effectiveness of training for their specific chosen sport. They will articulate their arguments coherently throughout.

**For merit standard,** learners will present the outcome of a methodical and detailed examination into the methods of physical and skill-related fitness training and their effectiveness in contributing to enhanced performance in a chosen sport. They will break down the training methods and interpret the relationship between each method used and the improvements to physical and skill-related fitness. Learners will use appropriate terminology and provide examples to illustrate their points.

**For pass standard,** learners will give a detailed account of the methods of training along with reasons and/or evidence to support the use of such methods to improve physical and skill-related fitness for a chosen sport. They will consider the effectiveness of each method and draw conclusions, giving appropriate examples to support these.

### Learning aim C

For learning aim C, learners are required to produce a detailed, periodised training programme for the athlete's whole performance cycle, and a training session plan as part of one phase of this programme. The programme and plan must relate to a chosen sport. This could be the same sport as in learning aims A and B. It would be beneficial for learners to take part in a planned session. Learners will then need to evaluate the effectiveness of the programme towards enhancing sports performance.

**For distinction standard,** learners will consider the effectiveness of the periodised training programme in improving sports performance. They will make judgements about the advantages, disadvantages and relevance of the programme in relation to the whole performance cycle, and the training plan in relation to the specific phase. Learners will draw conclusions about the programme's effectiveness, supported by well-considered examples. They will also make justified recommendations for adaptation or alternatives to the programme, training methods and plan. Learners will use appropriate terminology and provide examples to illustrate their points.

**For merit standard,** learners will present the outcome of a methodical and detailed examination into the design of the periodised training programme and training session plan. They will consider the appropriateness of the programme design against the performance cycle, the principles of training, the FITT principle and the performance requirements of the chosen sport. They will consider the effectiveness of the training session plan design against the appropriateness of activities, durations, intensities and relevance to the programme and chosen sport. Learners will then interpret the interrelationships between the training programme, the session plan and the performance improvement requirements as a whole. They will support their analysis using appropriate examples and will use appropriate terminology throughout.

**For pass standard,** learners will give a detailed account of the principles of training along with reasons and/or evidence to support why these principles must be considered when planning periodised training programmes and training session plans. They will draw conclusions as to the relevance of each training principle in relation to programming and the potential impacts of not considering these.

Learners will produce a detailed periodised training programme that covers the complete performance cycle and demonstrates the application of the principles of training and the FITT principle to improve performance in a chosen sport.

Learners will produce a detailed training session plan that relates to one aspect of the broader training programme. The plan must demonstrate appropriate training activities as identified in learning aim B and the principles of training plan design.

## Links to other units

This unit links to:

- Unit 1: Sport and Exercise Physiology
- Unit 2: Functional Anatomy
- Unit 3: Applied Sport and Exercise Psychology
- Unit 4: Field and Laboratory-based Fitness Testing
- Unit 5: Applied Research Methods in Sport and Exercise Science
- Unit 6: Coaching for Performance and Fitness
- Unit 9: Research Project in Sport and Exercise Science
- Unit 10: Physical Activity for Individual and Group-based Exercise
- Unit 11: Sports Massage
- Unit 13: Nutrition for Sport and Exercise Performance
- Unit 14: Technology in Sport and Exercise Science
- Unit 15: Sports Injury and Assessment.

## Employer involvement

Centres may involve employers in the delivery of this unit if there are local opportunities, for example:

- guest speakers
- opportunities to visit suitable businesses.





# Unit 10: Physical Activity for Individual and Group-based Exercise

Level: **3**

Unit type: **Internal**

Guided learning hours: **60**

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## Unit in brief

Learners cover theoretical and practical requirements for planning and instructing individual and group-based exercise sessions.

## Unit introduction

For many years, the health and fitness industry has included individual exercise sessions as well as group exercise classes as methods of helping people to participate in regular physical activity. To work as a physical activity instructor a range of planning and practical skills are required.

In this unit, you will gain an understanding of how to establish effective working relationships with individuals and groups of participants, which is essential in order to ensure that participants trust you and come back for business. You will also explore ways in which to help to support participants to encourage regular participation in physical activity. You will explore the types of exercises that can be used for both individual exercise sessions and group-based classes. You will then plan and instruct an individual and a group-based exercise session before carrying out a review of your sessions, allowing you to identify your strengths and areas for improvement in planning and instructing.

The knowledge and skills this unit gives you are an exciting combination of theory and applied aspects to help you gain an improved understanding and practical experience of instructing individual and group-based exercise sessions. These activities will prepare you for a variety of fitness instructing and sports coaching careers, and form a good basis for higher education study in sport and further qualifications such as sport and exercise science.

## Learning aims

In this unit you will:

- A** Explore the processes of health screening prior to physical activity participation
- B** Examine different types of exercise for individual and group-based exercise sessions
- C** Undertake planning and instructing of individual and group-based exercise sessions.

## Summary of unit

Learning aim	Key content areas	Recommended assessment approach
<b>A</b> Explore the processes of health screening prior to physical activity participation	<b>A1</b> Participant screening <b>A2</b> Factors affecting safe exercise participation	A written report focusing on screening activity results, factors affecting safe exercise participation and recommendations based on the results and factors, supported by evidence of completed lifestyle screening activities.
<b>B</b> Examine different types of exercise for individual and group-based exercise sessions	<b>B1</b> Performing exercises safely <b>B2</b> Types of cardiovascular exercises <b>B3</b> Types of resistance-based exercises <b>B4</b> Activities for an individual exercise session <b>B5</b> Activities for a group-based exercise session	
<b>C</b> Undertake planning and instructing of individual and group-based exercise sessions	<b>C1</b> Aims and objectives of the exercise session <b>C2</b> Individual exercise session planning <b>C3</b> Group exercise session planning <b>C4</b> Pre-exercise session preparation <b>C5</b> Preparing participants for exercise session <b>C6</b> Instructing an individual or group-based exercise session <b>C7</b> Reviewing own performance in providing an individual or group-based exercise session	An evaluative report into the planning and delivery of the gym-based session, supported by an individual exercise session plan, a group exercise session plan and observation records/video evidence of gym-based exercise session delivery.

## Content

### Learning aim A: Explore the processes of health screening prior to physical activity participation

#### A1 Participant screening

- Selection of appropriate screening methods:
  - questionnaires (PAR-Q, lifestyle questionnaires)
  - interviews
  - observation
  - informed consent
  - health monitoring tests, e.g. blood pressure, resting heart rate, body mass index (BMI), waist to hip ratio, lung function – interpretation of health monitoring data against normative data.
- Reasons for temporary deferral of exercise for participants:
  - concerns over health from screening processes
  - contraindications – pregnancy, treatment for chronic health problems.
- Maintaining client confidentiality.

#### A2 Factors affecting safe exercise participation

- Exercise intensity:
  - appropriate to health-related level
  - methods of measuring exercise intensity, e.g. percentage of heart rate max, rating of perceived exertion (RPE) scale, training zones for cardiovascular health and fitness.
- Factors affecting safe participation for specific groups:
  - children, e.g. should not take part in heavy resistance exercises, short periods of exercise with rest periods
  - antenatal or postnatal woman, e.g. avoid high impact and high intensity exercises, issues with stretching, limit abdominal exercises, avoid supine exercise after 16 weeks of pregnancy, avoid isometric or overhead resistance exercises
  - older person (50+), e.g. longer, more gradual warm-up period, gradually tapered cool-down, avoid high impact exercises, balance related concerns, incorporate functional life-related movements.

### Learning aim B: Examine different types of exercise for individual and group-based exercise sessions

#### B1 Performing exercises safely

- Warm-up:
  - pulse raises
  - mobiliser
  - stretching.
- Cool-down:
  - pulse lowers
  - stretching (maintenance and developmental).
- Safe alignment of exercise position.
- Health and environmental factors which can influence safety and group or individual working space.
- Developing client co-ordination by building exercises/movements up gradually.
- Intensity – adapting exercise/movements to increase and decrease the intensity.
- Impact – high and low impact exercises.
- Alternative exercises for specific participants, e.g. wall press-ups for the older adult, low impact exercises for antenatal participants.

## **B2 Types of cardiovascular exercises**

- Cardiovascular machines:
  - treadmill
  - cycle
  - rowing machine
- Cardiovascular exercises, e.g. jogging, skipping, jumping jacks, step-ups, shuttle runs.

## **B3 Types of resistance-based exercises**

- Types of resistance – free weights:
  - dumbbells
  - barbells
  - resistance weight machines
  - bands
  - body weights.
- Weight training exercises:
  - front raise
  - bent arm pullover
  - shoulder press
  - lateral raise
  - flyes
  - bicep curl
  - lunge
  - squat.
- Body weight resistance exercises:
  - press-ups
  - triceps dips
  - plank
  - sit-ups
  - lunge
  - squat
  - prone back raise.

## **B4 Activities for an individual exercise session**

- Gym-based exercise session:
  - cardiovascular exercises
  - resistance-based exercises.

## **B5 Activities for a group-based exercise session**

- Circuit exercise session.
- Stations to improve aerobic endurance:
  - shuttle runs
  - jogging on the spot
  - jumping jacks
  - spotty dogs
  - squat thrusts
  - knee lifts
  - step-ups
  - skipping.

- Stations to improve muscular strength and endurance:
  - shoulder press
  - dumbbell flyes
  - upright row
  - lateral raise
  - bicep curl
  - triceps extensions
  - dumbbell lunge
  - barbell squat
  - calf raise
  - triceps dips
  - press-ups
  - lunges
  - squats
  - side bends.
- Circuit cards:
  - name of exercise
  - diagram
  - teaching points
  - adaptations
  - progressions
  - alternatives.
- Circuit training layouts:
  - square
  - lined circuit
  - bow tie
  - circular
  - corners.

### **Learning aim C: Undertake planning and instructing of individual and group-based exercise sessions**

#### **C1 Aims and objectives of the exercise session**

- Individual or group-based exercise session.
- Gathering information from the participants to determine aims and objectives of exercise session.

#### **C2 Individual exercise session planning**

- Appropriate exercises are identified.
- Appropriate sequences of exercises.
- Appropriate timings of each exercise.
- Selection of the correct equipment for the session.
- Adapting a gym-based exercise programme to ensure appropriate progression and/or regression.

#### **C3 Group exercise session planning**

- Warm-up.
- Main component – cardiovascular endurance, muscular strength or muscular endurance.
- Cool-down.
- Length of time for each component.

#### **C4 Pre-exercise session preparation**

- Checking equipment.
- Ensuring area is sufficient and safe for the session.
- Appropriate temperature and ventilation.

#### **C5 Preparing participants for exercise session**

- Check participant's ability and any medical conditions.
- Inform the participant of the physical and technical demands of each exercise and the purpose and value of each exercise.
- Confirm or revise plans with the participant as appropriate.
- Demonstrate any specific movements.
- Advise participants of the facility's emergency procedures.

#### **C6 Instructing an individual or group-based exercise session**

- Explain and correctly demonstrate each exercise.
- Communicate as appropriate to the needs of the participant and the environment.
- Change position to observe participant.
- Monitor the safety and intensity of each exercise.
- Provide timely clear instructions and feedback.
- Adapt exercise with suitable progressions and regressions according to participant needs.
- Safe and effective cool-down activities.
- Feedback to the participant on how they have performed.
- Allow the participant to feed back to reflect on the session and ask questions.
- Follow correct procedures for checking and putting away equipment used.
- Ensure the area used is left in an acceptable condition for future use.

#### **C7 Reviewing own performance in providing an individual or group-based exercise session**

- Evaluate how well the exercises met the participants' needs.
- Relationship with the participants – how effective and motivational it was and how well the instructing style matched the participants' needs.
- Ways to improve personal practice.
- Value of reflective practice.

## Assessment criteria

Pass	Merit	Distinction
<b>Learning aim A: Explore the processes of health screening prior to physical activity participation</b>		<b>A.D1</b> Evaluate the screening from one individual, justifying suggestions for progression to safe exercise participation.
<b>A.P1</b> Perform participant screening and interpret the results for one individual.  <b>A.P2</b> Explain factors that can affect safe exercise participation for three individuals in different specific groups.	<b>A.M1</b> Perform effective screening using methods that are appropriate to the needs of one individual.  <b>A.M2</b> Assess the factors affecting the safe exercise participation of three specific individuals, making recommendations for their safe exercise participation.	
<b>Learning aim B: Examine different types of exercise for individual and group-based exercise sessions</b>		<b>BC.D2</b> Evaluate own performance in the planning and delivery of an individual or group-based exercise session to specific participants, justifying choices of adapted and alternative exercises, session strengths and recommendations for self-improvement.  <b>C.D3</b> Evaluate the impacts of participant assessment and choice of exercise on the planning and instruction of safe and effective exercise sessions.
<b>B.P3</b> Explain different methods of cardiovascular endurance training and resistance training for an individual exercise session.  <b>B.P4</b> Explain different methods of cardiovascular endurance training and resistance training for a group exercise session.	<b>B.M3</b> Compare different methods of cardiovascular and resistance training for individual and group exercise sessions, justifying the uses of each for participants with different needs.	
<b>Learning aim C: Undertake planning and instructing of individual and group-based exercise sessions</b>		
<b>C.P5</b> Plan and deliver a safe and effective individual or group-based exercise session that includes the performance of safe and effective cardiovascular and resistance-based exercises.  <b>C.P6</b> Review own performance in the delivery of an individual or group-based exercise session, identifying strengths and areas for improvement.	<b>C.M4</b> Plan and deliver a comprehensive individual or group-based exercise session using effective communication and offering adapted and alternative exercises for different specific participants.  <b>C.M5</b> Review own performance in the delivery of an exercise session, explaining strengths and providing recommendations for self-improvement.	

## Essential information for assignments

The recommended structure of assessment is shown in the unit summary along with suitable forms of evidence. *Section 6* gives information on setting assignments and there is further information on our website.

There is a maximum number of two summative assignments for this unit. The relationship of the learning aims and criteria is:

Learning aim: A (A.P1, A.P2, A.M1, A.M2, A.D1)

Learning aims: B and C (B.P3, B.P4, C.P5, C.P6, B.M3, C.M4, C.M5, BC.D2, C.D3)



## Further information for teachers and assessors

### Resource requirements

For this unit, learners must have access to suitable exercise facilities and equipment, for example, a gym with cardiovascular equipment, fixed resistance machines and free weights. Learners will also require access to suitable individuals who can act as participants.

### Essential information for assessment decisions

#### Learning aim A

For this learning aim students will need to undertake a variety of screening processes, including questionnaires that can be completed independently or via an interview process. Learners will need to be able to carry out health monitoring tests as part of the screening process.

**For distinction standard**, learners will interpret the results of the lifestyle questionnaire and health screening tests for one participant and evaluate how the results can have an impact on that person's lifestyle and exercise choices. They will need to be able to provide suggestions as to what sorts of exercises would be suitable for that person, with reasoning and justification from evidence discovered in the screening processes.

**For merit standard**, learners will carry out different methods of screening and select the most appropriate method for one participant in order to gain the maximum amount of information when interpreting and understanding the participant's lifestyle and exercise aims. Learners will present a careful consideration of the factors affecting the safe participation of three specific individuals. Learners will then provide suggestions to support the participant in ensuring that they exercise safely in line with their specific identified requirements. Learners should also provide suggestions for appropriate types of exercises and contraindications for participants from specific groups.

**For pass standard**, learners will carry out appropriate screening activities for one participant and interpret the results in terms of any lifestyle concerns and exercise requirements. Learners are able to identify any requirements for the participant to help them to exercise safely in relation to the information supplied in the screening processes. Learners consider the factors that can affect the safe participation of people from three specific groups. They give reasons as to why specific groups are affected by different, or similar, factors and support these views with appropriate examples for each specific group.

#### Learning aims B and C

The evidence for learning aim C could relate to an individual gym-based exercise session planned and delivered to one of the participants that was screened in learning aim A, or to a group-based circuit exercise session.

**For distinction standard**, learners will evaluate how they planned and delivered the exercise session, making judgements and forming conclusions on their own performance. Their judgements will be based on the effectiveness and appropriateness of the exercise techniques and communication methods they planned and used for cardiovascular endurance training and resistance training, and the ways in which they adapted each exercise to make them more or less challenging, depending on the needs of the participant(s). Their judgements will be supported by evidence of observation and/or feedback from the participant(s) taking part in the session.

From this evaluation they will justify their areas of strength, areas where improvement is needed and recommendations for how these improvements can be made.

**For merit standard**, learners will identify the main factors relating to three or more different methods of cardiovascular and resistance training for both individual and group-based exercise sessions, explaining the similarities, differences, advantages and disadvantages. They will then select different types of equipment for specific participants based on the participants' specific needs.

Learners will provide a detailed plan for an exercise session that takes into account the needs of the participant(s) and provides adaptations to each exercise. Learners will carry out the correct techniques when performing cardiovascular endurance training and resistance training. They will adapt each exercise or provide alternative exercises to meet the needs of the participant(s). Learners will demonstrate effective communication, both verbal and non-verbal, that meets the needs of the participant(s) and ensures that they know exactly what to do and are motivated throughout the exercise session. Learners will then carry out a review of their delivery of the exercise session, explaining what they did well and not so well, and the reasons for this. Learners also provide considered explanations and recommendations as to how they could improve their exercise session delivery in the future.

**For pass standard**, learners will show that they understand the different types of equipment available for cardiovascular endurance training and resistance training for both groups and individuals. The types of equipment that can be used will also need to be considered in relation to how one piece of equipment can be more suited than another to an individual's needs and preferences. Learners are able to prepare an exercise session that includes a minimum of three types of cardiovascular equipment and five resistance-based exercises. The plan must include relevant information about the aims and objectives of the session, the participant's needs, the equipment to be used and the exercise activities taking place. The activities must be safe and effective, appropriate to the participant's needs and requirements and designed to achieve the planned outcomes. Learners then need to show that they can deliver the planned session safely and effectively, demonstrating correct technique and providing accurate teaching points that are appropriate to the needs and limitations of the participant(s). The cardiovascular and resistance exercises and equipment used are likely to achieve the planned results and are unlikely to cause injury to the participant. Learners then need to review how the session went and identify what worked well in the session and areas for improvement.

### Links to other units

This unit links to:

- Unit 1: Sport and Exercise Physiology
- Unit 2: Functional Anatomy
- Unit 3: Applied Sport and Exercise Psychology
- Unit 4: Field and Laboratory-based Fitness Testing
- Unit 6: Coaching for Performance and Fitness
- Unit 8: Specialised Fitness Training
- Unit 11: Sports Massage
- Unit 13: Nutrition for Sport and Exercise Science
- Unit 14: Technology in Sport and Exercise Science
- Unit 15: Sports Injury and Assessment.

### Employer involvement

Centres may involve employers in the delivery of this unit if there are local opportunities. There is no specific guidance related to this unit.

## 4 Planning your programme

### How do I choose the right BTEC National qualification for my learners?

BTEC Nationals come in a range of sizes, each with a specific purpose. You will need to assess learners very carefully to ensure that they start on the right size of qualification to fit into their 16–19 study programme, and that they take the right pathways or optional units that allow them to progress to the next stage.

If a learner is clear that they want to progress to the workplace they should be directed towards an occupationally-specific qualification, such as a BTEC National Diploma, from the outset.

Some learners may want to take a number of complementary qualifications or keep their progression options open. These learners may be suited to taking a BTEC National Certificate or Extended Certificate. Learners who then decide to continue with a fuller vocational programme can transfer to a BTEC National Diploma or Extended Diploma, for example for their second year.

Some learners are sure of the sector they want to work in and are aiming for progression into that sector via higher education. These learners should be directed to the two-year BTEC National Extended Diploma as the most suitable qualification.

As a centre, you may want to teach learners who are taking different qualifications together. You may also wish to transfer learners between programmes to meet changes in their progression needs. You should check the qualification structures and unit combinations carefully as there is no exact match among the different sizes. You may find that learners need to complete more than the minimum number of units when transferring.

When learners are recruited, you need to give them accurate information on the title and focus of the qualification for which they are studying.

### Is there a learner entry requirement?

As a centre it is your responsibility to ensure that learners who are recruited have a reasonable expectation of success on the programme. There are no formal entry requirements but we expect learners to have qualifications at or equivalent to Level 2.

Learners are most likely to succeed if they have:

- five GCSEs at good grades and/or
- BTEC qualification(s) at Level 2
- achievement in English and mathematics through GCSE or Functional Skills.

Learners may demonstrate ability to succeed in various ways. For example, learners may have relevant work experience or specific aptitude shown through diagnostic tests or non-educational experience.

### What is involved in becoming an approved centre?

All centres must be approved before they can offer these qualifications – so that they are ready to assess learners and so that we can provide the support that is needed. Further information is given in *Section 8*.

### What level of sector knowledge is needed to teach these qualifications?

We do not set any requirements for teachers but recommend that centres assess the overall skills and knowledge of the teaching team to ensure that they are relevant and up to date. This will give learners a rich programme to prepare them for employment in the sector.

### What resources are required to deliver these qualifications?

As part of your centre approval you will need to show that the necessary material resources and work spaces are available to deliver BTEC Nationals. For some units, specific resources are required. This is indicated in the units.

### **How can myBTEC help with planning for these qualifications?**

myBTEC is an online toolkit that supports the delivery, assessment and quality assurance of BTECs in centres. It supports teachers with activities, such as choosing a valid combination of units, creating assignment briefs and creating assessment plans. For further information see *Section 10*.

### **Which modes of delivery can be used for these qualifications?**

You are free to deliver BTEC Nationals using any form of delivery that meets the needs of your learners. We recommend making use of a wide variety of modes, including direct instruction in classrooms or work environments, investigative and practical work, group and peer work, private study and e-learning.

### **What are the recommendations for employer involvement?**

BTEC Nationals are vocational qualifications and, as an approved centre, you are encouraged to work with employers on the design, delivery and assessment of the course to ensure that learners have a programme of study that is engaging and relevant and that equips them for progression. There are suggestions in many of the units about how employers could become involved in delivery and/or assessment but these are not intended to be exhaustive and there will be other possibilities at local level.

### **What support is available?**

We provide a wealth of support materials, including curriculum plans, delivery guides, authorised assignment briefs, additional papers for external assessments and examples of marked learner work.

You will be allocated a Standards Verifier early on in the planning stage to support you with planning your assessments. There will be extensive training programmes as well as support from our Subject Advisor team.

For further details see *Section 10*.

### **How will my learners become more employable through these qualifications?**

BTEC Nationals are mapped to relevant occupational standards (see *Appendix 1*).

Employability skills, such as team working and entrepreneurialism, and practical hands-on skills have been built into the design of the learning aims and content. This gives you the opportunity to use relevant contexts, scenarios and materials to enable learners to develop a portfolio of evidence that demonstrates the breadth of their skills and knowledge in a way that equips them for employment.

# 5 Assessment structure and external assessment

## Introduction

BTEC Nationals are assessed using a combination of *internal assessments*, which are set and marked by teachers, and *external assessments* which are set and marked by Pearson:

- mandatory units have a combination of internal and external assessments
- all optional units are internally assessed.

We have taken great care to ensure that the assessment method chosen is appropriate to the content of the unit and in line with requirements from employers and higher education.

In developing an overall plan for delivery and assessment for the programme, you will need to consider the order in which you deliver units, whether delivery is over short or long periods and when assessment can take place. Some units are defined as synoptic units (see *Section 2*).

Normally, a synoptic assessment is one that a learner would take later in a programme and in which they will be expected to apply learning from a range of units. Synoptic units may be internally or externally assessed. Where a unit is externally assessed you should refer to the sample assessment materials (SAMs) to identify where there is an expectation that learners draw on their wider learning. For internally-assessed units, you must plan the assignments so that learners can demonstrate learning from across their programme. A unit may be synoptic in one qualification and not another because of the relationship it has to the rest of the qualification.

We have addressed the need to ensure that the time allocated to final assessment of internal and external units is reasonable so that there is sufficient time for teaching and learning, formative assessment and development of transferable skills.

In administering internal and external assessment, the centre needs to be aware of the specific procedures and policies that apply, for example to registration, entries and results. An overview with signposting to relevant documents is given in *Section 7*.

## Internal assessment

Our approach to internal assessment for these qualifications will be broadly familiar to experienced centres. It offers flexibility in how and when you assess learners, provided that you meet assessment and quality assurance requirements. You will need to take account of the requirements of the unit format, which we explain in *Section 3*, and the requirements for delivering assessment given in *Section 6*.

## External assessment

A summary of the external assessment for this qualification is given in *Section 2*. You should check this information carefully, together with the unit specification and the sample assessment materials, so that you can timetable learning and assessment periods appropriately.

Learners must be prepared for external assessment by the time they undertake it. In preparing learners for assessment you will want to take account of required learning time, the relationship with other external assessments and opportunities for retaking. You should ensure that learners are not entered for unreasonable amounts of external assessment in one session. Learners may resit an external assessment to obtain a higher grade of near pass or above. If a learner has more than one attempt, then the best result will be used for qualification grading, up to the permitted maximum. It is unlikely that learners will need to or benefit from taking all assessments twice so you are advised to plan appropriately. Some assessments are synoptic and learners are likely to perform best if these assessments are taken towards the end of the programme.

## Key features of external assessment in sport and exercise science

In sport and exercise science, after consultation with stakeholders, we have developed the following.

- *Unit 2: Functional Anatomy* will contain short- and long-answer questions that will assess learners' understanding of anatomy and how movement can affect sports performance.
- *Unit 3: Applied Sport and Exercise Psychology*, learners will interpret psychological factors and data to create and justify a psychological intervention programme. The task will require learners to develop and justify a psychological intervention programme that meets the needs of a specific client.

## Units

The externally-assessed units have a specific format which we explain in *Section 3*. The content of units will be sampled across external assessments over time, through appropriate papers and tasks. The ways in which learners are assessed are shown through the assessment outcomes and grading descriptors. External assessments are marked and awarded using the grade descriptors. The grades available are Distinction (D), Merit (M), Pass (P) and Near Pass (N). The Near Pass (N) grade gives learners credit below a Pass, where they have demonstrated evidence of positive performance which is worth more than an unclassified result but not yet at the Pass standard.

## Sample assessment materials

Each externally-assessed unit has a set of sample assessment materials (SAMs) that accompanies this specification. The SAMs are there to give you an example of what the external assessment will look like in terms of the feel and level of demand of the assessment. In the case of units containing synoptic assessment, the SAMs will also show where learners are expected to select and apply from across the programme.

The SAMs show the range of possible question types that may appear in the actual assessments. They give you a good indication of how the assessments will be structured. While SAMs can be used for practice with learners as with any assessment, the content covered and specific details of the questions asked will change in each assessment.

A copy of each of these assessments can be downloaded from our website. To allow your learners further opportunities for practice, an additional sample of each of the Pearson-set units will be available before the first sitting of the assessment.

## 6 Internal assessment

This section gives an overview of the key features of internal assessment and how you, as an approved centre, can offer it effectively. The full requirements and operational information are given in the *Pearson Quality Assurance Handbook*. All members of the assessment team need to refer to this document.

For BTEC Nationals it is important that you can meet the expectations of stakeholders and the needs of learners by providing a programme that is practical and applied. Centres can tailor programmes to meet local needs and use links with local employers and the wider vocational sector.

When internal assessment is operated effectively it is challenging, engaging, practical and up to date. It must also be fair to all learners and meet national standards.

### Principles of internal assessment

#### Assessment through assignments

For internally-assessed units, the format of assessment is an assignment taken after the content of the unit, or part of the unit if several assignments are used, has been delivered. An assignment may take a variety of forms, including practical and written types. An assignment is a distinct activity completed independently by learners that is separate from teaching, practice, exploration and other activities that learners complete with direction from, and formative assessment by, teachers.

An assignment is issued to learners as an assignment brief with a defined start date, a completion date and clear requirements for the evidence that they need to provide. There may be specific observed practical components during the assignment period. Assignments can be divided into tasks and may require several forms of evidence. A valid assignment will enable a clear and formal assessment outcome based on the assessment criteria.

#### Assessment decisions through applying unit-based criteria

Assessment decisions for BTEC Nationals are based on the specific criteria given in each unit and set at each grade level. To ensure that standards are consistent in the qualification and across the suite as a whole, the criteria for each unit have been defined according to a framework. The way in which individual units are written provides a balance of assessment of understanding, practical skills and vocational attributes appropriate to the purpose of qualifications.

The assessment criteria for a unit are hierarchical and holistic. For example, if an M criterion requires the learner to show 'analysis' and the related P criterion requires the learner to 'explain', then to satisfy the M criterion a learner will need to cover both 'explain' and 'analyse'. The unit assessment grid shows the relationships among the criteria so that assessors can apply all the criteria to the learner's evidence at the same time. In *Appendix 2* we have set out a definition of terms that assessors need to understand.

Assessors must show how they have reached their decisions using the criteria in the assessment records. When a learner has completed all the assessment for a unit then the assessment team will give a grade for the unit. This is given simply according to the highest level for which the learner is judged to have met all the criteria. Therefore:

- to achieve a Distinction, a learner must have satisfied all the Distinction criteria (and therefore the Pass and Merit criteria); these define outstanding performance across the unit as a whole
- to achieve a Merit, a learner must have satisfied all the Merit criteria (and therefore the Pass criteria) through high performance in each learning aim
- to achieve a Pass, a learner must have satisfied all the Pass criteria for the learning aims, showing coverage of the unit content and therefore attainment at Level 3 of the national framework.

The award of a Pass is a defined level of performance and cannot be given solely on the basis of a learner completing assignments. Learners who do not satisfy the Pass criteria should be reported as Unclassified.

### **The assessment team**

It is important that there is an effective team for internal assessment. There are three key roles involved in implementing assessment processes in your centre, each with different interrelated responsibilities, the roles are listed below. Full information is given in the *Pearson Quality Assurance Handbook*.

- The Lead Internal Verifier (the Lead IV) has overall responsibility for the programme, its assessment and internal verification to meet our requirements, record keeping and liaison with the Standards Verifier. The Lead IV registers with Pearson annually. The Lead IV acts as an assessor, supports the rest of the assessment team, makes sure that they have the information they need about our assessment requirements and organises training, making use of our guidance and support materials.
- Internal Verifiers (IVs) oversee all assessment activity in consultation with the Lead IV. They check that assignments and assessment decisions are valid and that they meet our requirements. IVs will be standardised by working with the Lead IV. Normally, IVs are also assessors but they do not verify their own assessments.
- Assessors set or use assignments to assess learners to national standards. Before taking any assessment decisions, assessors participate in standardisation activities led by the Lead IV. They work with the Lead IV and IVs to ensure that the assessment is planned and carried out in line with our requirements.

### **Effective organisation**

Internal assessment needs to be well organised so that the progress of learners can be tracked and so that we can monitor that assessment is being carried out in line with national standards. We support you through, for example, providing training materials and sample documentation. Our online myBTEC service can help support you in planning and record keeping. Further information on using myBTEC can be found in *Section 10* and on our website.

It is particularly important that you manage the overall assignment programme and deadlines to make sure that learners are able to complete assignments on time.

### **Learner preparation**

To ensure that you provide effective assessment for your learners, you need to make sure that they understand their responsibilities for assessment and the centre's arrangements.

From induction onwards, you will want to ensure that learners are motivated to work consistently and independently to achieve the requirements of the qualifications. Learners need to understand how assignments are used, the importance of meeting assignment deadlines and that all the work submitted for assessment must be their own.

You will need to give learners a guide that explains how assignments are used for assessment, how assignments relate to the teaching programme and how learners should use and reference source materials, including what would constitute plagiarism. The guide should also set out your approach to operating assessment, such as how learners must submit work and request extensions.



## Setting effective assignments

### Setting the number and structure of assignments

In setting your assignments, you need to work with the structure of assignments shown in the *Essential information for assignments* section of a unit. This shows the structure of the learning aims and criteria that you must follow and the recommended number of assignments that you should use. For some units we provide authorised assignment briefs. For all the units we give you suggestions on how to create suitable assignments. You can find these materials along with this specification on our website. In designing your own assignment briefs you should bear in mind the following points.

- The number of assignments for a unit must not exceed the number shown in *Essential information for assignments*. However, you may choose to combine assignments, for example to create a single assignment for the whole unit.
- You may also choose to combine all or parts of different units into single assignments, provided that all units and all their associated learning aims are fully addressed in the programme overall. If you choose to take this approach, you need to make sure that learners are fully prepared so that they can provide all the required evidence for assessment and that you are able to track achievement in the records.
- A learning aim must always be assessed as a whole and must not be split into two or more tasks.
- The assignment must be targeted to the learning aims but the learning aims and their associated criteria are not tasks in themselves. Criteria are expressed in terms of the outcome shown in the evidence.
- For units containing synoptic assessment, the planned assignments must allow learners to select and apply their learning using appropriate self-management of tasks.
- You do not have to follow the order of the learning aims of a unit in setting assignments but later learning aims often require learners to apply the content of earlier learning aims and they may require learners to draw their learning together.
- Assignments must be structured to allow learners to demonstrate the full range of achievement at all grade levels. Learners need to be treated fairly by being given the opportunity to achieve a higher grade if they have the ability.
- As assignments provide a final assessment, they will draw on the specified range of teaching content for the learning aims. The specified content is compulsory. The evidence for assessment need not cover every aspect of the teaching content as learners will normally be given particular examples, case studies or contexts in their assignments. For example, if a learner is carrying out one practical performance, or an investigation of one organisation, then they will address all the relevant range of content that applies in that instance.

### Providing an assignment brief

A good assignment brief is one that, through providing challenging and realistic tasks, motivates learners to provide appropriate evidence of what they have learned.

An assignment brief should have:

- a vocational scenario, this could be a simple situation or a full, detailed set of vocational requirements that motivates the learner to apply their learning through the assignment
- clear instructions to the learner about what they are required to do, normally set out through a series of tasks
- an audience or purpose for which the evidence is being provided
- an explanation of how the assignment relates to the unit(s) being assessed.

## Forms of evidence

BTEC Nationals have always allowed for a variety of forms of evidence to be used, provided that they are suited to the type of learning aim being assessed. For many units, the practical demonstration of skills is necessary and for others, learners will need to carry out their own research and analysis. The units give you information on what would be suitable forms of evidence to give learners the opportunity to apply a range of employability or transferable skills. Centres may choose to use different suitable forms for evidence to those proposed. Overall, learners should be assessed using varied forms of evidence.

Full definitions of types of assessment are given in *Appendix 2*. These are some of the main types of assessment:

- written reports
- projects
- time-constrained practical assessments with observation records and supporting evidence
- recordings of performance
- sketchbooks, working logbooks, reflective journals
- presentations with assessor questioning.

The form(s) of evidence selected must:

- allow the learner to provide all the evidence required for the learning aim(s) and the associated assessment criteria at all grade levels
- allow the learner to produce evidence that is their own independent work
- allow a verifier to independently reassess the learner to check the assessor's decisions.

For example, when you are using performance evidence, you need to think about how supporting evidence can be captured through recordings, photographs or task sheets.

Centres need to take particular care that learners are enabled to produce independent work.

For example, if learners are asked to use real examples, then best practice would be to encourage them to use their own or to give the group a number of examples that can be used in varied combinations.

## Making valid assessment decisions

### Authenticity of learner work

Once an assessment has begun, learners must not be given feedback on progress towards fulfilling the targeted criteria.

An assessor must assess only learner work that is authentic, i.e. learners' own independent work. Learners must authenticate the evidence that they provide for assessment through signing a declaration stating that it is their own work.

Assessors must ensure that evidence is authentic to a learner through setting valid assignments and supervising them during the assessment period. Assessors must take care not to provide direct input, instructions or specific feedback that may compromise authenticity.

Assessors must complete a declaration that:

- the evidence submitted for this assignment is the learner's own
- the learner has clearly referenced any sources used in the work
- they understand that false declaration is a form of malpractice.

Centres can use Pearson templates or their own templates to document authentication.

During assessment, an assessor may suspect that some or all of the evidence from a learner is not authentic. The assessor must then take appropriate action using the centre's policies for malpractice. Further information is given in *Section 7*.

### Making assessment decisions using criteria

Assessors make judgements using the criteria. The evidence from a learner can be judged using all the relevant criteria at the same time. The assessor needs to make a judgement against each criterion that evidence is present and sufficiently comprehensive. For example, the inclusion of a concluding section may be insufficient to satisfy a criterion requiring 'evaluation'.

Assessors should use the following information and support in reaching assessment decisions:

- the *Essential information for assessment decisions* section in each unit gives examples and definitions related to terms used in the criteria
- the explanation of key terms in *Appendix 2*
- examples of assessed work provided by Pearson
- your Lead IV and assessment team's collective experience, supported by the standardisation materials we provide.

Pass and Merit criteria relate to individual learning aims. The Distinction criteria as a whole relate to outstanding performance across the unit. Therefore, criteria may relate to more than one learning aim (for example A.D1) or to several learning aims (for example DE.D3). Distinction criteria make sure that learners have shown that they can perform consistently at an outstanding level across the unit and/or that they are able to draw learning together across learning aims.

### Dealing with late completion of assignments

Learners must have a clear understanding of the centre policy on completing assignments by the deadlines that you give them. Learners may be given authorised extensions for legitimate reasons, such as illness at the time of submission, in line with your centre policies.

For assessment to be fair, it is important that learners are all assessed in the same way and that some learners are not advantaged by having additional time or the opportunity to learn from others. Therefore, learners who do not complete assignments by your planned deadline or the authorised extension deadline may not have the opportunity to subsequently resubmit.

If you accept a late completion by a learner, then the assignment should be assessed normally when it is submitted using the relevant assessment criteria.

## Issuing assessment decisions and feedback

Once the assessment team has completed the assessment process for an assignment, the outcome is a formal assessment decision. This is recorded formally and reported to learners.

The information given to the learner:

- must show the formal decision and how it has been reached, indicating how or where criteria have been met
- may show why attainment against criteria has not been demonstrated
- must not provide feedback on how to improve evidence
- must be validated by an IV before it is given to the learner.

## Resubmission of improved evidence

An assignment provides the final assessment for the relevant learning aims and is normally a final assessment decision, except where the Lead IV approves one opportunity to resubmit improved evidence based on the completed assignment brief.

The Lead IV has the responsibility to make sure that resubmission is operated fairly. This means:

- checking that a learner can be reasonably expected to perform better through a second submission, for example that the learner has not performed as expected
- making sure that giving a further opportunity can be done in such a way that it does not give an unfair advantage over other learners, for example through the opportunity to take account of feedback given to other learners
- checking that the assessor considers that the learner will be able to provide improved evidence without further guidance and that the original evidence submitted remains valid.

Once an assessment decision has been given to the learner, the resubmission opportunity must have a deadline within 15 working days in the same academic year.

A resubmission opportunity must not be provided where learners:

- have not completed the assignment by the deadline without the centre's agreement
- have submitted work that is not authentic.

## Retake of internal assessment

A learner who has not achieved the level of performance required to pass the relevant learning aims after resubmission of an assignment may be offered a single retake opportunity using a new assignment. The retake may only be achieved at a Pass.

The Lead Internal Verifier must only authorise a retake of an assignment in exceptional circumstances where they believe it is necessary, appropriate and fair to do so. For further information on offering a retake opportunity, you should refer to the *BTEC Centre Guide to Internal Assessment*. We provide information on writing assignments for retakes on our website ([www.btec.co.uk/keydocuments](http://www.btec.co.uk/keydocuments)).

## Planning and record keeping

For internal processes to be effective, an assessment team needs to be well organised and keep effective records. The centre will also work closely with us so that we can quality assure that national standards are being satisfied. This process gives stakeholders confidence in the assessment approach.

The Lead IV must have an assessment plan, produced as a spreadsheet or using myBTEC.

When producing a plan, the assessment team may wish to consider:

- the time required for training and standardisation of the assessment team
- the time available to undertake teaching and carry out assessment, taking account of when learners may complete external assessments and when quality assurance will take place
- the completion dates for different assignments
- who is acting as IV for each assignment and the date by which the assignment needs to be verified
- setting an approach to sampling assessor decisions through internal verification that covers all assignments, assessors and a range of learners
- how to manage the assessment and verification of learners' work so that they can be given formal decisions promptly
- how resubmission opportunities can be scheduled.

The Lead IV will also maintain records of assessment undertaken. The key records are:

- verification of assignment briefs
- learner authentication declarations
- assessor decisions on assignments, with feedback given to learners
- verification of assessment decisions.

Examples of records and further information are given in the *Pearson Quality Assurance Handbook*.

# 7 Administrative arrangements

## Introduction

This section focuses on the administrative requirements for delivering a BTEC qualification. It will be of value to Quality Nominees, Lead IVs, Programme Leaders and Examinations Officers.

## Learner registration and entry

Shortly after learners start the programme of learning, you need to make sure that they are registered for the qualification and that appropriate arrangements are made for internal and external assessment. You need to refer to the *Information Manual* for information on making registrations for the qualification and entries for external assessments.

Learners can be formally assessed only for a qualification on which they are registered. If learners' intended qualifications change, for example if a learner decides to choose a different pathway specialism, then the centre must transfer the learner appropriately.

## Access to assessment

Both internal and external assessments need to be administered carefully to ensure that all learners are treated fairly, and that results and certification are issued on time to allow learners to progress to chosen progression opportunities.

Our equality policy requires that all learners should have equal opportunity to access our qualifications and assessments, and that our qualifications are awarded in a way that is fair to every learner. We are committed to making sure that:

- learners with a protected characteristic are not, when they are undertaking one of our qualifications, disadvantaged in comparison to learners who do not share that characteristic
- all learners achieve the recognition they deserve for undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

Further information on access arrangements can be found in the Joint Council for Qualifications (JCQ) document *Access Arrangements, Reasonable Adjustments and Special Consideration for General and Vocational Qualifications*.

## Administrative arrangements for internal assessment

### Records

You are required to retain records of assessment for each learner. Records should include assessments taken, decisions reached and any adjustments or appeals. Further information can be found in the *Information Manual*. We may ask to audit your records so they must be retained as specified.

### Reasonable adjustments to assessment

A reasonable adjustment is one that is made before a learner takes an assessment to ensure that they have fair access to demonstrate the requirements of the assessments. You are able to make adjustments to internal assessments to take account of the needs of individual learners. In most cases this can be achieved through a defined time extension or by adjusting the format of evidence. We can advise you if you are uncertain as to whether an adjustment is fair and reasonable. You need to plan for time to make adjustments if necessary.

Further details on how to make adjustments for learners with protected characteristics are given on our website in the document *Supplementary guidance for reasonable adjustment and special consideration in vocational internally-assessed units*.

### Special consideration

Special consideration is given after an assessment has taken place for learners who have been affected by adverse circumstances, such as illness. You must operate special consideration in line with our policy (see previous paragraph). You can provide special consideration related to the period of time given for evidence to be provided or for the format of the assessment if it is equally valid. You may not substitute alternative forms of evidence to that required in a unit, or omit the application of any assessment criteria to judge attainment. Pearson can consider applications for special consideration in line with the policy.

### Appeals against assessment

Your centre must have a policy for dealing with appeals from learners. These appeals may relate to assessment decisions being incorrect or assessment not being conducted fairly. The first step in such a policy could be a consideration of the evidence by a Lead IV or other member of the programme team. The assessment plan should allow time for potential appeals after assessment decisions have been given to learners. If there is an appeal by a learner, you must document the appeal and its resolution. Learners have a final right of appeal to Pearson but only if the procedures that you have put in place have not been followed. Further details are given in the document *Enquiries and appeals about Pearson vocational qualifications and end point assessment policy*.

## Administrative arrangements for external assessment

### Entries and resits

For information on the timing of assessment and entries, please refer to the annual examinations timetable on our website.

### Access arrangements requests

Access arrangements are agreed with Pearson before an assessment. They allow students with special educational needs, disabilities or temporary injuries to:

- access the assessment
- show what they know and can do without changing the demands of the assessment.

Access arrangements should always be processed at the time of registration. Learners will then know what type of arrangements are available in place for them.

### Granting reasonable adjustments

For external assessment, a reasonable adjustment is one that we agree to make for an individual learner. A reasonable adjustment is defined for the individual learner and informed by the list of available access arrangements.

Whether an adjustment will be considered reasonable will depend on a number of factors, to include:

- the needs of the learner with the disability
- the effectiveness of the adjustment
- the cost of the adjustment; and
- the likely impact of the adjustment on the learner with the disability and other learners.

Adjustment may be judged unreasonable and not approved if it involves unreasonable costs, timeframes or affects the integrity of the assessment.

### Special consideration requests

Special consideration is an adjustment made to a learner's mark or grade after an external assessment to reflect temporary injury, illness or other indisposition at the time of the assessment. An adjustment is made only if the impact on the learner is such that it is reasonably likely to have had a material effect on that learner being able to demonstrate attainment in the assessment.

Centres are required to notify us promptly of any learners who they believe have been adversely affected and request that we give special consideration. Further information can be found in the special requirements section on our website.



## **Conducting external assessments**

Centres must make arrangements for the secure delivery of external assessments. External assessments for BTEC qualifications include examinations, set tasks and performance.

Each external assessment has a defined degree of control under which it must take place. Some external assessments may have more than one part and each part may have a different degree of control. We define degrees of control as follows.

### **High control**

This is the completion of assessment in formal invigilated examination conditions.

### **Medium control**

This is completion of assessment, usually over a longer period of time, which may include a period of controlled conditions. The controlled conditions may allow learners to access resources, prepared notes or the internet to help them complete the task.

### **Low control**

These are activities completed without direct supervision. They may include research, preparation of materials and practice. The materials produced by learners under low control will not be directly assessed.

Further information on responsibilities for conducting external assessment is given in the document *Instructions for Conducting External Assessments*, available on our website.

## Dealing with malpractice in assessment

Malpractice means acts that undermine the integrity and validity of assessment, the certification of qualifications, and/or that may damage the authority of those responsible for delivering the assessment and certification.

Pearson does not tolerate actions (or attempted actions) of malpractice by learners, centre staff or centres in connection with Pearson qualifications. Pearson may impose penalties and/or sanctions on learners, centre staff or centres where incidents (or attempted incidents) of malpractice have been proven.

Malpractice may arise or be suspected in relation to any unit or type of assessment within the qualification. For further details regarding malpractice and advice on preventing malpractice by learners, please see Pearson's *Centre guidance: Dealing with malpractice and maladministration in vocational qualifications*, available on our website.

The procedures we ask you to adopt vary between units that are internally-assessed and those that are externally assessed.

### Internally-assessed units

Centres are required to take steps to prevent malpractice and to investigate instances of suspected malpractice. Learners must be given information that explains what malpractice is for internal assessment and how suspected incidents will be dealt with by the centre. The *Centre Guidance: Dealing with Malpractice* document gives full information on the actions we expect you to take.

Pearson may conduct investigations if we believe that a centre is failing to conduct internal assessment according to our policies. The above document gives further information, examples and details the penalties and sanctions that may be imposed.

In the interests of learners and centre staff, centres need to respond effectively and openly to all requests relating to an investigation into an incident of suspected malpractice.

### Externally-assessed units

External assessment means all aspects of units that are designated as external in this specification, including preparation for tasks and performance. For these assessments, centres must follow the JCQ procedures set out in the latest version of *JCQ Suspected Malpractice in Examinations and Assessments Policies and Procedures* ([www.jcq.org.uk](http://www.jcq.org.uk)).

In the interests of learners and centre staff, centres need to respond effectively and openly to all requests relating to an investigation into an incident of suspected malpractice.

### Learner malpractice

Heads of Centres are required to report incidents of any suspected learner malpractice that occur during Pearson external assessments. We ask that centres do so by completing a *JCQ Form M1* (available at [www.jcq.org.uk/exams-office/malpractice](http://www.jcq.org.uk/exams-office/malpractice)) and emailing it and any accompanying documents (signed statements from the learner, invigilator, copies of evidence, etc.) to the Investigations Team at [candidatemalpractice@pearson.com](mailto:candidatemalpractice@pearson.com). The responsibility for determining appropriate sanctions or penalties to be imposed on learners lies with Pearson.

Learners must be informed at the earliest opportunity of the specific allegation and the centre's malpractice policy, including the right of appeal. Learners found guilty of malpractice may be disqualified from the qualification for which they have been entered with Pearson.

## Teacher/centre malpractice

Heads of Centres are required to inform Pearson's Investigations Team of any incident of suspected malpractice by centre staff, before any investigation is undertaken. Heads of centres are requested to inform the Investigations Team by submitting a *JCQ Form M2(a)* (available at [www.jcq.org.uk/exams-office/malpractice](http://www.jcq.org.uk/exams-office/malpractice)) with supporting documentation to [pqsmalpractice@pearson.com](mailto:pqsmalpractice@pearson.com). Where Pearson receives allegations of malpractice from other sources (for example Pearson staff or anonymous informants), the Investigations Team will conduct the investigation directly or may ask the head of centre to assist.

Incidents of maladministration (accidental errors in the delivery of Pearson qualifications that may affect the assessment of learners) should also be reported to the Investigations Team using the same method.

Heads of Centres/Principals/Chief Executive Officers or their nominees are required to inform learners and centre staff suspected of malpractice of their responsibilities and rights; see Section 6.15 of the *JCQ Suspected Malpractice in Examinations and Assessments Policies and Procedures* document.

Pearson reserves the right in cases of suspected malpractice to withhold the issuing of results and/or certificates while an investigation is in progress. Depending on the outcome of the investigation results and/or certificates may be released or withheld.

You should be aware that Pearson may need to suspend certification when undertaking investigations, audits and quality assurances processes. You will be notified within a reasonable period of time if this occurs.

## Sanctions and appeals

Where malpractice is proven we may impose sanctions or penalties.

Where learner malpractice is evidenced, penalties may be imposed such as:

- mark reduction for external assessments
- disqualification from the qualification
- being barred from registration for Pearson qualifications for a period of time.

If we are concerned about your centre's quality procedures we may impose sanctions such as:

- working with you to create an improvement action plan
- requiring staff members to receive further training
- placing temporary blocks on your certificates
- placing temporary blocks on registration of learners
- debarring staff members or the centre from delivering Pearson qualifications
- suspending or withdrawing centre approval status.

The centre will be notified if any of these apply.

Pearson has established procedures for centres that are considering appeals against penalties and sanctions arising from malpractice. Appeals against a decision made by Pearson will normally be accepted only from Heads of Centres (on behalf of learners and/or members of staff) and from individual members (in respect of a decision taken against them personally). Further information on appeals can be found in our *Enquiries and appeals about Pearson vocational qualifications and end point assessment policy*, which is on our website. In the initial stage of any aspect of malpractice, please notify the Investigations Team by email via [pqsmalpractice@pearson.com](mailto:pqsmalpractice@pearson.com) who will inform you of the next steps.

## Certification and results

Once a learner has completed all the required components for a qualification, even if final results for external assessments have not been issued, then the centre can claim certification for the learner, provided that quality assurance has been successfully completed. For the relevant procedures please refer to our *Information Manual*. You can use the information provided on qualification grading to check overall qualification grades.

### Results issue

After the external assessment session, learner results will be issued to centres. The result will be in the form of a grade. You should be prepared to discuss performance with learners, making use of the information we provide and post-results services.

### Post-assessment services

Once results for external assessments are issued, you may find that the learner has failed to achieve the qualification or to attain an anticipated grade. It is possible to transfer or reopen registration in some circumstances. The *Information Manual* gives further information.

### Changes to qualification requests

Where a learner who has taken a qualification wants to resit an externally-assessed unit to improve their qualification grade, you firstly need to decline their overall qualification grade. You may decline the grade before the certificate is issued. For a learner receiving their results in August, you should decline the grade by the end of September if the learner intends to resit an external assessment.

## Additional documents to support centre administration

As an approved centre you must ensure that all staff delivering, assessing and administering the qualifications have access to this documentation. These documents are reviewed annually and are reissued if updates are required.

- *Pearson Quality Assurance Handbook*: this sets out how we will carry out quality assurance of standards and how you need to work with us to achieve successful outcomes.
- *Information Manual*: this gives procedures for registering learners for qualifications, transferring registrations, entering for external assessments and claiming certificates.
- *Lead Examiners' Reports*: these are produced after each series for each external assessment and give feedback on the overall performance of learners in response to tasks or questions set.
- *Instructions for the Conduct of External Assessments (ICEA)*: this explains our requirements for the effective administration of external assessments, such as invigilation and submission of materials.
- *Regulatory policies*: our regulatory policies are integral to our approach and explain how we meet internal and regulatory requirements. We review the regulated policies annually to ensure that they remain fit for purpose. Policies related to this qualification include:
  - adjustments for candidates with disabilities and learning difficulties, access arrangements and reasonable adjustments for general and vocational qualifications
  - age of learners
  - centre guidance for dealing with malpractice
  - recognition of prior learning and process.

This list is not exhaustive and a full list of our regulatory policies can be found on our website.

## 8 Quality assurance

### Centre and qualification approval

As part of the approval process, your centre must make sure that the resource requirements listed below are in place before offering the qualification.

- Centres must have appropriate physical resources (for example equipment, IT, learning materials, teaching rooms) to support the delivery and assessment of the qualification.
- Staff involved in the assessment process must have relevant expertise and/or occupational experience.
- There must be systems in place to ensure continuing professional development for staff delivering the qualification.
- Centres must have in place appropriate health and safety policies relating to the use of equipment by learners.
- Centres must deliver the qualification in accordance with current equality legislation.
- Centres should refer to the teacher guidance section in individual units to check for any specific resources required.

### Continuing quality assurance and standards verification

On an annual basis, we produce the *Pearson Quality Assurance Handbook*. It contains detailed guidance on the quality processes required to underpin robust assessment and internal verification.

The key principles of quality assurance are that:

- a centre delivering BTEC programmes must be an approved centre, and must have approval for the programmes or groups of programmes that it is delivering
- the centre agrees, as part of gaining approval, to abide by specific terms and conditions around the effective delivery and quality assurance of assessment; it must abide by these conditions throughout the period of delivery
- Pearson makes available to approved centres a range of materials and opportunities, through online standardisation, intended to exemplify the processes required for effective assessment, and examples of effective standards. Approved centres must use the materials and services to ensure that all staff delivering BTEC qualifications keep up to date with the guidance on assessment
- an approved centre must follow agreed protocols for standardisation of assessors and verifiers, for the planning, monitoring and recording of assessment processes, and for dealing with special circumstances, appeals and malpractice.

The approach of quality-assured assessment is through a partnership between an approved centre and Pearson. We will make sure that each centre follows best practice and employs appropriate technology to support quality-assurance processes, where practicable. We work to support centres and seek to make sure that our quality-assurance processes do not place undue bureaucratic processes on centres. We monitor and support centres in the effective operation of assessment and quality assurance.

The methods we use to do this for BTEC Level 3 include:

- making sure that all centres complete appropriate declarations at the time of approval
- undertaking approval visits to centres
- making sure that centres have effective teams of assessors and verifiers who are trained to undertake assessment
- assessment sampling and verification, through requested samples of assessments, completed assessed learner work and associated documentation
- an overarching review and assessment of a centre's strategy for delivering and quality assuring its BTEC programmes, for example making sure that synoptic units are placed appropriately in the order of delivery of the programme.

Centres that do not fully address and maintain rigorous approaches to delivering, assessing and quality assurance cannot seek certification for individual programmes or for all BTEC Level 3 programmes. An approved centre must make certification claims only when authorised by us and strictly in accordance with requirements for reporting.

Centres that do not comply with remedial action plans may have their approval to deliver qualifications removed.

## 9 Understanding the qualification grade

### Awarding and reporting for the qualification

This section explains the rules that we apply in awarding a qualification and in providing an overall qualification grade for each learner. It shows how all the qualifications in this sector are graded.

The awarding and certification of these qualifications will comply with regulatory requirements.

### Eligibility for an award

In order to be awarded a qualification, a learner must complete all units, achieve a Near Pass (N) or above in all external units and a Pass or above in all mandatory units, unless otherwise specified. Please refer to the structure in *Section 2*.

To achieve any qualification grade, learners must:

- complete and **have an outcome** (D, M, P, N or U) for all units in a valid combination
- achieve the **required units at Pass or above** shown in *Section 2* and, for the Extended Diploma, achieve a minimum 900 GLH at Pass or above (or N or above in external units)
- achieve the **minimum number of points** at a grade threshold.

It is the responsibility of a centre to ensure that a correct unit combination is adhered to. Learners who do not achieve the required minimum grade (N or P) in units shown in the structure will not achieve a qualification.

Learners who do not achieve sufficient points for a qualification or who do not achieve all the required units may be eligible to achieve a smaller qualification in the same suite provided they have completed and achieved the correct combination of units and met the appropriate qualification grade points threshold.

### Calculation of the qualification grade

The final grade awarded for a qualification represents an aggregation of a learner's performance across the qualification. As the qualification grade is an aggregate of the total performance, there is some element of compensation in that a higher performance in some units may be balanced by a lower outcome in others.

In the event that a learner achieves more than the required number of optional units, the mandatory units along with the optional units with the highest grades will be used to calculate the overall result, subject to the eligibility requirements for that particular qualification title.

BTEC Nationals are Level 3 qualifications and are awarded at the grade ranges shown in the table below.

Qualification	Available grade range
Certificate, Extended Certificate, Foundation Diploma	P to D*
Diploma	PP to D*D*
Extended Diploma	PPP to D*D*D*

The *Calculation of qualification grade* table, shown further on in this section, shows the minimum thresholds for calculating these grades. The table will be kept under review over the lifetime of the qualification. The most up to date table will be issued on our website.

Pearson will monitor the qualification standard and reserves the right to make appropriate adjustments.

Learners who do not meet the minimum requirements for a qualification grade to be awarded will be recorded as Unclassified (U) and will not be certificated. They may receive a Notification of Performance for individual units. The *Information Manual* gives full information.

### Points available for internal units

The table below shows the number of **points** available for internal units. For each internal unit, points are allocated depending on the grade awarded.

	Unit size	
	60 GLH	90 GLH
U	0	0
Pass	6	9
Merit	10	15
Distinction	16	24

### Points available for external units

Raw marks from the external units will be awarded **points** based on performance in the assessment. The table below shows the **minimum number of points** available for each grade in the external units.

	Unit size	
	90 GLH	120 GLH
U	0	0
Near Pass	6	8
Pass	9	12
Merit	15	20
Distinction	24	32

Pearson will automatically calculate the points for each external unit once the external assessment has been marked and grade boundaries have been set. For more details about how we set grade boundaries in the external assessment please go to our website.

### Claiming the qualification grade

Subject to eligibility, Pearson will automatically calculate the qualification grade for your learners when the internal unit grades are submitted and the qualification claim is made. Learners will be awarded qualification grades for achieving the sufficient number of points within the ranges shown in the relevant *Calculation of qualification grade* table for the cohort.

## Calculation of qualification grade

Applicable for registration from 1 September 2018.

Extended Certificate		Foundation Diploma		Diploma		Extended Diploma	
360 GLH		510 GLH		720 GLH		1080 GLH	
Grade	Points threshold	Grade	Points threshold	Grade	Points threshold	Grade	Points threshold
U	0	U	0	U	0	U	0
P Pass	36	P	51	PP	72	PPP	108
				MP	88	MPP	124
						MMP	140
Merit	52	M	73	MM	104	MMM	156
				DM	124	DMM	176
						DDM	196
Distinction	74	D	104	DD	144	DDD	216
				D*D	162	D*DD	234
						D*D*D	252
Distinction*	90	D*	130	D*D*	180	D*D*D*	270

The table is subject to review over the lifetime of the qualification. The most up-to-date version will be issued on our website.



## Examples of grade calculations based on table applicable to registrations from September 2018

### Example 1: Achievement of an Extended Certificate with a P grade

	GLH	Type (Int/Ext)	Grade	Unit points
Unit 2	90	Ext	Near Pass	6
Unit 3	120	Ext	Pass	12
Unit 6	90	Int	Distinction	24
Unit 7	60	Int	Unclassified	0
<b>Totals</b>	<b>360</b>		<b>P</b>	<b>42</b>

The learner has achieved a Near Pass or above in Units 2 and 3, and Pass or above in Unit 6.

The learner has sufficient points for a P grade.

### Example 2: Achievement of an Extended Certificate with an M grade

	GLH	Type (Int/Ext)	Grade	Unit points
Unit 2	90	Ext	Near Pass	6
Unit 3	120	Ext	Merit	20
Unit 6	90	Int	Distinction	24
Unit 7	60	Int	Distinction	16
<b>Totals</b>	<b>360</b>		<b>M</b>	<b>66</b>

The learner has sufficient points for an M grade.

### Example 3: An Unclassified Result for an Extended Certificate

	GLH	Type (Int/Ext)	Grade	Unit points
Unit 2	90	Ext	Unclassified	0
Unit 3	120	Ext	Merit	20
Unit 6	90	Int	Distinction	24
Unit 7	60	Int	Merit	10
<b>Totals</b>	<b>360</b>		<b>U</b>	<b>54</b>

The learner has a U in Unit 2.

The learner has sufficient points for an M grade but has not met the minimum requirement for a Near Pass or above in Units 2 and 3.

# 10 Resources and support

Our aim is to give you a wealth of resources and support to enable you to deliver BTEC National qualifications with confidence. On our website you will find a list of resources to support teaching and learning, and professional development.

## Support for setting up your course and preparing to teach

### Specification

This **specification** (for teaching from September 2018) includes details on the administration of qualifications and information on all the units for the qualification.

### Delivery Guide

This free guide gives you important advice on how to choose the right course for your learners and how to ensure you are fully prepared to deliver the course. It explains the key features of BTEC Nationals (for example employer involvement and employability skills). It also covers guidance on assessment (internal and external) and quality assurance. The guide tells you where you can find further support and gives detailed unit-by-unit delivery guidance. It includes teaching tips and ideas, assessment preparation and suggestions for further resources.

### Schemes of work

Free sample schemes of work are provided for each mandatory unit. These are available in Word™ format for ease of customisation.

### Curriculum models

These show how the BTECs in the suite fit into a 16–19 study programme, depending on their size and purpose. The models also show where other parts of the programme, such as work experience, maths and English, tutorial time and wider study, fit alongside the programme.

### Study skills activities

A range of case studies and activities is provided; they are designed to help learners develop the study skills they need to successfully complete their BTEC course. The case studies and activities are provided in Word™ format for easy customisation.

### myBTEC

myBTEC is a free, online toolkit that lets you plan and manage your BTEC provision from one place. It supports the delivery, assessment and quality assurance of BTECs in centres and supports teachers with the following activities:

- checking that a programme is using a valid combination of units
- creating and verifying assignment briefs (including access to a bank of authorised assignment briefs that can be customised)
- creating assessment plans and recording assessment decisions
- tracking the progress of every learner throughout their programme.

To find out more about myBTEC, visit the myBTEC page on the support services section of our website. We will add the new BTEC National specifications to myBTEC as soon as possible.

## Support for teaching and learning

Pearson Learning Services provides a range of engaging resources to support BTEC Nationals, including:

- textbooks in e-book and print formats
- revision guides and revision workbooks in e-book and print formats
- teaching and assessment packs, including e-learning materials via the Active Learn Digital Service.

Teaching and learning resources are also available from a number of other publishers. Details of Pearson's own resources and of all endorsed resources can be found on our website.

## Support for assessment

### Sample assessment materials for externally-assessed units

Sample assessments are available for the Pearson-set units. One copy of each of these assessments can be downloaded from the website/available in print. For each suite, an additional sample for one of the Pearson-set units is also available, allowing your learners further opportunities for practice.

Further sample assessments will be made available through our website on an ongoing basis.

### Sample assessment materials for internally-assessed units

We do not prescribe the assessments for the internally-assessed units. Rather, we allow you to set your own, according to your learners' preferences and to link with your local employment profile.

We do provide a service in the form of Authorised Assignment Briefs, which are approved by Pearson Standards Verifiers. They are available via our website or free on myBTEC.

### Sample marked learner work

To support you in understanding the expectation of the standard at each grade, examples of marked learner work at PM/MD grades are linked to the Authorised Assignment Briefs.

## Training and support from Pearson

### People to talk to

There are many people who are available to support you and provide advice and guidance on delivery of your BTEC Nationals. These include:

- Subject Advisors – available for all sectors. They understand all Pearson qualifications in their sector and so can answer sector-specific queries on planning, teaching, learning and assessment
- Standards Verifiers – they can support you with preparing your assignments, ensuring that your assessment plan is set up correctly, and support you in preparing learner work and providing quality assurance through sampling
- Curriculum Development Managers (CDMs) – they are regionally based and have a full overview of the BTEC qualifications and of the support and resources that Pearson provides. CDMs often run network events
- Customer Services – the 'Support for You' section of our website gives the different ways in which you can contact us for general queries. For specific queries, our service operators can direct you to the relevant person or department.

### Training and professional development

Pearson provides a range of training and professional development events to support the introduction, delivery, assessment and administration of BTEC National qualifications. These sector-specific events, developed and delivered by specialists, are available both face to face and online.

#### 'Getting Ready to Teach'

These events are designed to get teachers ready for delivery of the BTEC Nationals. They include an overview of the qualifications' structures, planning and preparation for internal and external assessment, and quality assurance.

#### Teaching and learning

Beyond the 'Getting Ready to Teach' professional development events, there are opportunities for teachers to attend sector- and role-specific events. These events are designed to connect practice to theory; they provide teacher support and networking opportunities with delivery, learning and assessment methodology.

Details of our training and professional development programme can be found on our website.

## Appendix 1 Links to industry standards

BTEC Nationals have been developed in consultation with industry and appropriate sector bodies to ensure that the qualification content and approach to assessment aligns closely to the needs of employers. Where they exist, and are appropriate, National Occupational Standards (NOS) and professional body standards have been used to establish unit content.

## Appendix 2 Glossary of terms used for internally-assessed units

This is a summary of the key terms used to define the requirements in the units.

Term	Definition
Analyse	Learners present the outcome of methodical and detailed examination either: <ul style="list-style-type: none"> <li>• breaking down a theme, topic or situation in order to interpret and study the interrelationships between the parts and/or</li> <li>• of information or data to interpret and study key trends and interrelationships.</li> </ul> Analysis can be through activity, practice, written or verbal presentation.
Assess	Learners present a careful consideration of varied factors or events that apply to a specific situation, or identify those which are the most important or relevant and arrive at a conclusion.
Compare	Learners identify the main factors relating to two or more items/situations or aspects of a subject that is extended to explain the similarities, differences, advantages and disadvantages. This is used to show depth of knowledge through selection of characteristics.
Create/construct	Skills to make or do something, e.g. a display.
Demonstrate	To show knowledge and understanding.
Discuss	Learners consider different aspects of: <ul style="list-style-type: none"> <li>• a theme or topic;</li> <li>• how they interrelate; and</li> <li>• the extent to which they are important.</li> </ul> A conclusion is not required.
Evaluate	Learners' work draws on varied information, themes or concepts to consider aspects such as: <ul style="list-style-type: none"> <li>• strengths or weaknesses</li> <li>• advantages or disadvantages</li> <li>• alternative actions</li> <li>• relevance or significance.</li> </ul> Learners' enquiries should lead to a supported judgement, showing relationship to its context. This will often be in a conclusion. Evidence will often be written but could be through presentation or activity.
Examine	Knowledge with application where learners are expected to select and apply knowledge to less familiar contexts.
Explore	Skills and/or knowledge involving practical testing or trialling.
Identify	Learners indicate the main features or purpose of something by recognising it and/or being able to discern and understand facts or qualities.

<b>Term</b>	<b>Definition</b>
Interpret	Learners state the meaning, purpose or qualities of something through the use of images, words or other expressions.
Investigate	Knowledge based on personal research and development.
Justify	Learners give reasons or evidence to: <ul style="list-style-type: none"> <li>• support an opinion; or</li> <li>• prove something right or reasonable.</li> </ul>
Manage	Learners engage with and influence an activity or process.
Report	Learners adhere to protocols, codes and conventions where findings or judgements are set down in an objective way.
Research	Learners proactively seek information from primary and secondary sources.
Review	Process for learning (knowledge or skills).
Stage and manage	Organisation and management skills, e.g. running an event.
Undertake/carry out/develop	Skills. Often referring to given processes or techniques.

This is a key summary of the types of evidence used for BTEC Nationals

<b>Type of evidence</b>	<b>Definition and purpose</b>
Case study	A specific example to which all learners must select and apply knowledge.
Group task	Learners work together to show skills in defining and structuring activity as a group.
Independent research	An analysis of substantive research organised by learners from secondary and, if applicable, primary sources.
Poster/leaflet	Documents providing well-presented information for a given purpose.
Presentation	Oral or through demonstration.
Production of plan/business plan	Learners produce a plan as an outcome related to a given or limited task.
Project	A self-directed, large-scale activity requiring, planning, research, exploration, outcome and review.
Reflective journal	Completion of a journal from work experience, detailing skills acquired for employability.
Simulated activity/role play	A multi-faceted activity mimicking realistic work situations.
Written task or report	Individual completion of a task in a work-related format, e.g. a report, marketing communication or set of instructions, giving information.

# Pearson BTEC Level 3 Nationals in Sport and Exercise Science

## Extended Certificate in Sport and Exercise Science

Foundation Diploma in Sport and Exercise Science

Diploma in Sport and Exercise Science

Extended Diploma in Sport and Exercise Science

***First teaching from September 2018***

***First certification from 2019***

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