

Cambridge TECHNICALS LEVEL 2

SPORT AND PHYSICAL ACTIVITY

Cambridge
TECHNICALS
2016

Unit 1

Physical activity, health and wellbeing

M/615/2384

Guided learning hours: 60

Version 1 September 2016

LEVEL 2

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Guided learning hours: 60

Essential resources required for this unit: None

This unit is externally assessed by an OCR set and marked examination.

UNIT AIM

Physical inactivity is of growing concern and is now one of the top ten causes of premature death globally. In order to stop the decline in activity, people need to know the benefits of participation in sport and physical activity for the body systems and physical health, and also for their mental wellbeing and overall quality of life. It is easier for people to understand the benefits if they are able to measure their progress and so knowledge of measurements of health and wellbeing can support in demonstrating the positive effects of participation. It is also important to know why and how levels of activity are measured, by whom and strategies that are in place to overcome barriers to participation.

By completing this unit, you will gain knowledge of the effects that participation in physical activity can have on the body systems and how this in turn can impact a person's physical and mental health. You will also gain knowledge of how health can be measured and the wider goings on in society in relation to sport and physical activity.

TEACHING CONTENT

The unit content describes what has to be taught to ensure that learners are able to access the highest grade.

Anything which follows an i.e. details what must be taught as part of that area of content.

Anything which follows an e.g. is illustrative.

Where teaching content contains i.e. and e.g. under specific areas of content, the following rules will be adhered to when we set questions for an exam:

- A direct question may be asked about unit content which follows an i.e.
- Where unit content is shown as an e.g. a direct question will not be asked about that example.

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
1. Know the effects and benefits of participation in sport and physical activity on the musculoskeletal system	1.1 The skeletal system, i.e. <ol style="list-style-type: none"> 1. names and locations of major bones, i.e. <ol style="list-style-type: none"> a. cranium b. scapula c. clavicle d. humerus e. radius f. ulna g. sternum h. pelvic girdle i. femur j. tibia k. fibula l. patella m. ribs n. carpals o. tarsals 	

Learning outcomes	Teaching content	Exemplification
<p>The Learner will:</p>	<p>Learners must be taught:</p>	
	<ul style="list-style-type: none"> p. metacarpals q. metatarsals r. vertebrae <p>2. functions of the skeleton, i.e.</p> <ul style="list-style-type: none"> a. movement b. protection c. shape d. support e. storage of minerals <p>1.2 Muscular system, i.e.</p> <p>1. names and locations of major muscles, i.e.</p> <ul style="list-style-type: none"> a. deltoids b. trapezius c. latissimus dorsi d. biceps e. triceps f. pectorals g. abdominals h. gluteus maximus i. hamstrings j. quadriceps k. soleus l. gastrocnemius <p>2. the role of tendons, i.e.</p> <ul style="list-style-type: none"> a. attach muscle to bone b. to provide stability, stop over-extension and prevent dislocation 	<p>Learners need to be able to link functions in 1.1.2 to all major bones in 1.1.1 E.g. ribs to protect internal organs such as the lungs; femur to provide attachment of muscles to allow movement at the hip.</p> <p>1.2.2 – learners need to be able to recognise a tendon in a diagram showing major bones/muscles</p>

Learning outcomes	Teaching content	Exemplification
<p>The Learner will:</p>	<p>Learners must be taught:</p> <ul style="list-style-type: none"> 3. functions of the muscular system, i.e. <ul style="list-style-type: none"> a. movement/contraction b. maintenance of posture energy (glycogen stored in muscles) 1.3 Joints, i.e. <ul style="list-style-type: none"> 1. types and locations of joints, i.e. <ul style="list-style-type: none"> a. ball and socket i.e. <ul style="list-style-type: none"> i. shoulder ii. hip b. hinge, i.e. <ul style="list-style-type: none"> i. elbow ii. knee iii. ankle c. gliding, i.e. <ul style="list-style-type: none"> i. hand ii. foot iii. vertebrae d. pivot, i.e. <ul style="list-style-type: none"> i. neck e. saddle, i.e. <ul style="list-style-type: none"> i. thumb f. condyloid, i.e. <ul style="list-style-type: none"> i. wrist 2. structure of joints, i.e. <ul style="list-style-type: none"> a. cartilage b. ligaments c. synovial fluid d. joint capsule 	<p>1.3.2 - Learners need to know the structure of each of the joints in 1.3.1</p>

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
	<p>3. movement of joints, i.e.</p> <ul style="list-style-type: none"> a. flexion b. extension c. abduction d. adduction e. rotation <p>1.4 Positive musculoskeletal effects of sport and physical activity, i.e.</p> <p>1. Physiological effects, i.e.</p> <ul style="list-style-type: none"> a. increased bone density b. increased muscle size and strength (hypertrophy) c. increased muscle endurance d. increased power e. increased flexibility in tendons f. increased flexibility in ligaments g. increased stability in joints <p>2. health benefits, i.e.</p> <ul style="list-style-type: none"> a) improved balance and coordination b) improved flexibility, speed and mobility c) improved core strength and maintenance of a healthy posture d) prevents osteoporosis e) prevents osteoarthritis f) sustain a healthy lifestyle into old age g) able to sustain physical activity for longer periods of time h) improved metabolic rate helps to control weight 	<p>1.3.3 - Learners need to know the movement(s) of each of the joints in 1.3.1</p>

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
<p>2. Know the effects and benefits of participation in sport and physical activity on the cardio-respiratory system</p>	<p>2.1 The cardiac system, i.e.</p> <ol style="list-style-type: none"> 1. the names and locations of the components of the heart and their function, i.e. <ol style="list-style-type: none"> a. atria b. ventricles c. valves d. aorta e. vena cava f. pulmonary artery g. pulmonary vein 2. type of blood vessel and their function, i.e. <ol style="list-style-type: none"> a. arteries b. veins c. capillaries 3. the components of blood and their function, i.e. <ol style="list-style-type: none"> a. white cells b. red cells c. platelets d. plasma 4. the direction that blood flows through the cardiac system 5. functions of the cardiac system, i.e. <ol style="list-style-type: none"> a. transport blood containing oxygen and nutrients b. removal of waste from muscles and other organs c. fight infection and disease d. regulation of body temperature 	<p>Learners need to know how different parts of the cardio-respiratory system function collectively as well as in isolation, linking knowledge between 2.1 and 2.2.</p>

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
	<p>2.2 The names and locations of the components of the respiratory system and their function, i.e.</p> <ol style="list-style-type: none"> 1. nasal cavity 2. epiglottis 3. pharynx 4. larynx 5. trachea 6. lungs, i.e. <ol style="list-style-type: none"> a. bronchi b. bronchioles c. alveoli 7. respiratory muscles, i.e. <ol style="list-style-type: none"> a. diaphragm b. intercostals 8 functions of the respiratory system, i.e. <ol style="list-style-type: none"> a. intake of oxygen b. gaseous exchange c. expel carbon dioxide <p>2.3 Positive cardiorespiratory effects of sport and physical activity, i.e.</p> <ol style="list-style-type: none"> 1. physiological effects, i.e. <ol style="list-style-type: none"> a. increase in size and strength of heart muscle b. cardiac output increases c. lower resting heart rate d. increased number of capillaries in muscles e. increased volume of blood and red blood cells 	

Learning outcomes The Learner will:	Teaching content Learners must be taught:	Exemplification
	<ul style="list-style-type: none"> f. increased size and strength of respiratory muscles g. increased respiratory volumes (VO₂ max) h. increased number of alveoli <p>2. health benefits, i.e.</p> <ul style="list-style-type: none"> a. lowers blood pressure b. able to sustain physical activity for longer periods of time c. able to sustain an active lifestyle into old age d. alleviates symptoms of asthma e. reduced risk of heart and vascular disease, i.e. <ul style="list-style-type: none"> i. Coronary Heart Disease (CHD) ii. Cardio Pulmonary Disease (CPD) iii. Atherosclerosis f. improves efficiency of the circulatory system g. reduced risk of some cancers 	
3. Know measures of health and wellbeing	<p>3.1 Health measurements, i.e.</p> <ul style="list-style-type: none"> 1. BMI, i.e. <ul style="list-style-type: none"> a. information required <ul style="list-style-type: none"> i. sex ii. height iii. weight iv. age v. calculation – weight in kilograms (kg) divided by height in metres (m), then divide the answer by height (m) b. classifications, i.e. <ul style="list-style-type: none"> i. underweight (below 18.5) 	Learners need to relate knowledge of health measurements to information/data given in some questions. This information/data could take the form of graphs, tables, charts or descriptive information.

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
	<ul style="list-style-type: none"> ii. healthy weight (18.5 – 24.9) iii. overweight (25 – 29.9) iv. obese (30 – 34.9) v. very obese (35 – 39.9) vi. morbidly obese (40 or more) <ul style="list-style-type: none"> 2. body fat percentage, i.e. <ul style="list-style-type: none"> a. fit, i.e. <ul style="list-style-type: none"> i. men 14-17% ii. women 21-24% b. acceptable, i.e. <ul style="list-style-type: none"> i. men 18-25% ii. women 25-31% c. obese, i.e. <ul style="list-style-type: none"> i. men >25% ii. women >31% 3. resting heart rate, i.e. <ul style="list-style-type: none"> a. 60-100 beats per minute (bpm) 4. lung capacity, i.e. <ul style="list-style-type: none"> a. peak flow test 5. blood pressure, i.e. <ul style="list-style-type: none"> a. systolic, i.e. <ul style="list-style-type: none"> i. the highest pressure when your heart beats b. diastolic, i.e. <ul style="list-style-type: none"> i. the lowest pressure between heart beats c. low blood pressure, i.e. <ul style="list-style-type: none"> i. 90/60 or less 	

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
4. Know trends in participation in sport and physical activity	<p>d. ideal blood pressure, i.e.</p> <ol style="list-style-type: none"> i. 90/60 – 120/80 <p>e. normal blood pressure, i.e.</p> <ol style="list-style-type: none"> i. 120/80 – 140/90 <p>f. high blood pressure, i.e.</p> <ol style="list-style-type: none"> i. 140/90 or more <p>4.1 Main sources of information on participation in sport and physical activity, i.e.</p> <ol style="list-style-type: none"> 1. Government, i.e. <ol style="list-style-type: none"> a. Department for Culture, Media and Sport b. Department of Health c. Department for Education 2. Sport England 3. Youth Sport Trust 4. Office for National Statistics (ONS) <p>4.2 Groups or populations analysed in terms of participation in sport and physical activity, i.e.</p> <ol style="list-style-type: none"> 1. male and female 2. people with disabilities 3. different ethnicities 4. different age groups, i.e. <ol style="list-style-type: none"> a. young children (0-10 year-olds) b. children/adolescents (11-15 year-olds) c. young adults (16-24 year-olds) d. adults (25-50-year-olds) e. over 50-year-olds and retired people <p>4.3 Trends over time, i.e.</p> <ol style="list-style-type: none"> 1. participation levels by group or population (4.2) 2. participation levels by sport or physical activity, i.e. 	<p>Learners will need to be familiar with the sources of information listed in 4.1, the type of information and how it is presented.</p> <p>They should be aware of general trends and current information relating to participation but they do not need to be able to recall data from sources of information, in questions where it is required, the data will be provided.</p>

Learning outcomes The Learner will:	Teaching content Learners must be taught:	Exemplification
	<ul style="list-style-type: none"> a. swimming b. athletics c. cycling d. football e. netball <p>3. frequency of participation</p> <p>4.4 Barriers to participation in sport and physical activity, i.e.</p> <ul style="list-style-type: none"> 1. illness/injury/disability 2. cost/income 3. access 4. time 5. work restrictions 6. family commitments 7. local provision 8. awareness 9. cultural (e.g. ethnicity, religious beliefs, gender) <p>4.5 Solutions to barriers to participation in sport and physical activity, i.e.</p> <ul style="list-style-type: none"> 1. specialised activity programming (e.g. ladies only, mother and toddler, disability groups) 2. accessibility, i.e. <ul style="list-style-type: none"> a. wheelchair ramps b. assistive technology (e.g. stair lifts, pool hoists) c. multilingual and braille information/signage d. hearing loops 3. targeted marketing 	

Learning outcomes	Teaching content	Exemplification
The Learner will:	Learners must be taught:	
	4. discounts and promotions 5. campaigns and strategies to raise awareness 6. 'taster' days 7. community provision, i.e. <ul style="list-style-type: none"> a. facilities b. groups 	

LEARNING OUTCOME (LO) WEIGHTINGS

Each learning outcome in this unit has been given a percentage weighting. This reflects the size and demand of the content you need to cover and its contribution to the overall understanding of this unit. See table below:

LO1	40%
LO2	30%
LO3	15%
LO4	15%

ASSESSMENT GUIDANCE

All Learning Outcomes are assessed through an externally set and marked, multiple choice examination paper, worth a maximum of 40 marks and 45 minutes in duration.

The knowledge assessed in this unit will underpin the skills and understanding required in all of the other units in this qualification.

SYNOPTIC ASSESSMENT

It will be possible for learners to make connections between other units over and above the unit containing the key tasks for synoptic assessment, please see section 6 of the centre handbook for more detail.

MEANINGFUL EMPLOYER INVOLVEMENT - a requirement for Technical Certificate qualifications

These qualifications have been designed to be recognised as Technical certificates in performance tables in England. It is a requirement of these qualifications for centres to secure employer involvement through delivery and/or assessment of these qualifications for every learner.

The minimum amount of employer involvement must relate to at least one or more of the elements of the mandatory content. This unit is mandatory in all pathways.

Eligible activities and suggestions/ideas that may help you in securing meaningful employer involvement for this unit are given in the table below.

Please refer to the Qualification Handbook for further information including a list of activities that are not considered to meet this requirement.

Meaningful employer involvement – eligible activities	Suggestion/ideas for centres when delivering this unit
1. Learners undertake structured work-experience or work-placements that develop skills and knowledge relevant to the qualification.	Learners could undertake work-experience in a gym or leisure centre where measurements of health and wellbeing are taken by personal trainers and fitness instructors.
2. Learners take one or more units delivered or co-delivered by an industry practitioner(s). This could take the form of master classes or guest lectures.	A physiotherapist or sports therapist could deliver a workshop or lesson on LOs 1 and/or 2. A Fitness Instructor or Personal Trainer could deliver a workshop or lesson on LO3. A Sports Development Officer could deliver a workshop or lesson on LO4.

You can find further information on employer involvement in the delivery of qualifications in the following documents:

- [Employer involvement in the delivery and assessment of vocational qualifications](#)
- [DfE work experience guidance](#)

To find out more
ocr.org.uk/sport

or call our Customer Contact Centre on **02476 851509**

Alternatively, you can email us on **vocational.qualifications@ocr.org.uk**



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