



Topic on a Page for BTEC Tech Award (L1/2): Sport

Component 1: Preparing Participants to
Take Part in Sport and Physical Activity

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Mind Maps

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- 10 Adapting a warm-up for different categories of participants and types of physical activities, and delivering a warm-up to prepare participants for physical activity

All of the above are provided as summary sheets and activity pages in both A3 and A4 formats.

Teacher's Introduction

This Topic on a Page resource has been created for the BTEC Tech Level 1/2 Award in Sport (first teaching 2022). It covers all the teaching content for **Component 1: Preparing Participants to Take Part in Sport and Physical Activity**. The aim of this resource is to summarise the different areas of the teaching content into manageable sheets of A3 paper, providing students with an overview of each area.

The resource comes with partially completed mind maps which form activity pages, giving students the opportunity to test their knowledge of the content by completing the questions set out on each page. Each page can be used by students of all abilities. For example, high-achieving students could apply additional examples to illustrate each topic area, whereas lower-ability students may wish to annotate the mind maps to enhance their understanding of each topic.

How to use the resource:

- The sheets can be handed out at the end of the course, or at the end of each topic for revision purposes. This can help students recap knowledge at the end of teaching.
- Each page can be printed out in poster size and displayed on your classroom walls as the topic is being taught, so that students have a visual reminder of what they have been covering in their lessons.
- Students should be encouraged to complete the partially completed mind maps to test their knowledge for this unit.

Specification reference table

There are 10 pages in total which cover the three topic areas within the unit specification. The following table can be used to identify which specification points you are teaching.

Page no.	Title	Spec reference
A – Explore types and provision of sport and physical activity for different types of participant		
1	Types and providers of sport and physical activities 1: Types of sport and physical activity	A1
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B – Examine equipment and technology required for participants to use when taking part in sport and physical activity		
7	Different types of sports clothing and equipment required for participation in sport and physical activity	B1
8	Different types of technology and their benefits and limitations	B2–B3
C – Be able to prepare participants to take part in physical activity		
9	Planning a warm-up (types and responses)	C1
10	Adapting a warm-up for different categories of participants and types of physical activities, and delivering a warm-up to prepare participants for physical activity	C2–C3

July 2023

TYPES AND PROVIDERS OF SPORT AND PHYSICAL

There are many different types of sports and physical activities that people participate in – far too many to cover on a single sheet of A3 paper! Each sport and physical activity can generally be placed within one of four categories (see below).

However, there is a lot of crossover between these categories as some sports can be competed in as individual or team events, just like many outdoor activities are participated in for the purpose of improving physical fitness. Some sports can also be participated in as forms of outdoor or physical fitness activities. Below we will cover each category in more depth and provide examples of sports and activities in each category, as well as drawing links between them.

KEY TERMS

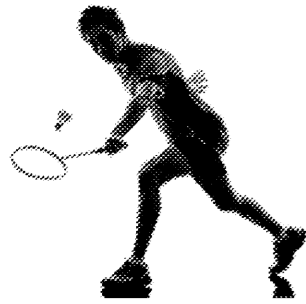
Sport – any competitive physical exertion involving a set of rules and a national or international governing body.

Physical activity – any movement that requires energy expenditure.

INDIVIDUAL SPORTS

Where one individual competes against another person.

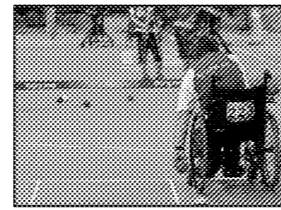
Racquet sports such as tennis and badminton.



Field athletics events such as the steeplechase, and track athletics events such as the long jump.



Martial arts such as taekwondo and karate.



Disability sports such as Boccia where players must throw their ball so that it lands close to a target ball.

Others include:

Gymnastics, boxing, trampolining, cycling, platform diving



Golf is competed in as an individual sport in competitions such as the British Majors, but it is also a common physical fitness activity for older participants.

PHYSICAL FITNESS

Physical fitness activities are different body systems and health conditions.



Others include:

CrossFit, Zumba, etc.

TEAM SPORTS

Where two or more individuals compete against another partnership or team to work towards the same goal (usually winning).

Most team sports are competed in as ball sports



Football teams consist of attackers, midfielders, defenders and a goalkeeper.

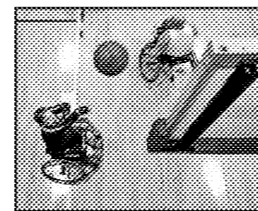


Rugby is split into Union and League codes. Teams consist of forwards and backs.



Cricket teams consist of players that have specialist roles, such as batting, bowling and wicketkeeping.

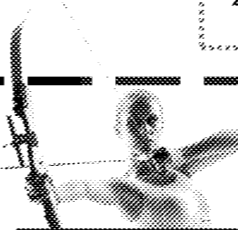
Some sports can be performed as both individual and team activities. For example, tennis and badminton can be played both singles and doubles. Field athletics and swimming can be competed in as individual or team events in competitions.



There are also disability variations of sports, such as wheelchair basketball and blind football.

Others include

Hockey, netball, volleyball, rowing, hurling, handball



Many outdoor activities can be competed in as individual or team events. Canoeing/Paracanoeing, kayaking, and sports such as skiing and snowboarding are all Olympic/Paralympic sports.



Snow sports such as skiing, snowboarding and snowshoeing.

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IMPROVES RESILIENCE AND SELF-CONFIDENCE

Recovery following a defeat or a criticism of performance in sport helps to develop our **resilience** for future performances. Good performances and success in competition help with gaining **self-confidence**.

Resilience – the ability to recover from difficult and challenging times.

Self-confidence – the belief in our own abilities to perform well.

DEVELOPS LEADERSHIP SKILLS

Sport allows us to build experience on how to get the best out of others. Leaders in sport are very effective in their communication and can identify when others might need support and the most effective way to provide this.



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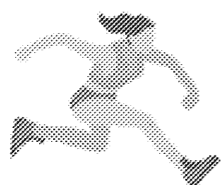
1. IMPROVES FITNESS LEVELS

Participation helps to improve the physical and skill-related components needed to take part in sport, such as the coordination needed to use multiple body parts at the same time.

IMPROVES PHYSICAL HEALTH

Fitness activities can improve physical health outcomes, e.g.:

- Helps control weight (reduces obesity)
- Healthy blood pressure
- Reduced risk of diseases, e.g. coronary heart disease



BENEFITS OF TAKING PART IN SPORT AND PHYSICAL ACTIVITY

INCREASES CONFIDENCE LEVELS

Participating in physical fitness activities can lead to a more positive body image, improving perceptions about appearance.

TIME
Performs people of (has min)

BENEFITS OF TAKING PART IN PHYSICAL FITNESS ACTIVITIES

IMPROVES BODY COMPOSITION

A lot of physical fitness activities are targeted towards people who are looking to reduce body fat and build lean muscle mass.



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ALLOWS FOR GOAL-SETTING

Improving fitness through physical activity can give the participant inspiration to set goals and get the most out of their training.

REDUCES SCREEN TIME ON ELECTRONIC DEVICES

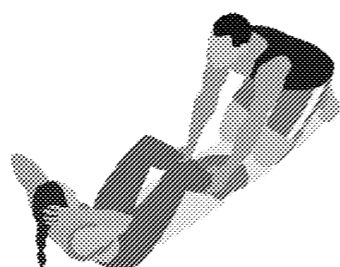
Performing activities in nature can be a way of reducing screen time on electronic devices. This helps to avoid unhealthy **sedentary behaviour**.

It can reduce stress and anxiety, which is often associated with excessive screen time and improve mental health.



OPPORTUNITY TO MEET NEW PEOPLE

There are many groups, clubs and classes that offer physical fitness activities, providing the opportunity to meet new people and make friends.



Body composition is the ratio of fat to fat free mass (water, muscle and bone) that makes up our bodies.

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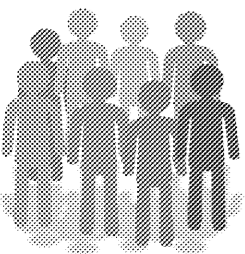


TYPES OF PROVIDERS OF SPORT AND PHYSICAL ACTIVITY

Provision of sports and physical activity can be found across the entire world. The levels and types of **provision** will vary by country and depend on the amount of government investment in the health and fitness industry. The three key sectors that provide the opportunities to participate are the **public**, **private** and **voluntary** sectors. Each has different advantages and disadvantages in terms of their funding source, aims, quality of provision and accessibility to different groups of people.

PUBLIC SECTOR

The UK's public sector is largely funded from taxpayers' money. This is distributed to local authorities who are provided with a budget to maintain the health and fitness of the population in a local area. This includes schoolchildren and community centres.



CHARACTERISTICS

Source of funding	Funded by taxpayers' money and distributed by the central government to local authorities.
Main aims	To increase mass participation across all social groups and promote a healthy, active nation.
Quality of provision	Basic and lacking in range as local government must keep budget costs low.
Accessibility	Highly accessible due to initiatives that overcome barriers, e.g. campaigns for disadvantaged groups.

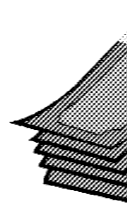
EXAMPLE OF PUBLIC PROVISION

Local leisure centres are run by local authorities, e.g. local councils. The example here is Horfield Leisure Centre in a suburban area of Bristol. It is funded by Bristol City Council and provides gym and swim facilities for local residents, who can either pay per visit or purchase a membership at a discounted rate.



PRIVATE SECTOR

Consist of companies whose primary aim is to make a profit. This may be world-class facilities for elite teams and athletes, or facilities owned by successful businesspeople.



CHARACTERISTICS

Source of funding	Wealthy businesspeople or consortiums that have ownership of companies or professional sports teams.
Main aims	To maximise profits by using marketing techniques and adapting to the latest fitness trends to attract members.
Quality of provision	Use of the latest equipment and technology provides a wide range of fitness and activity opportunities.
Accessibility	Some facilities are exclusive to elite athletes. Some are open to the public and charge premium prices.

EXAMPLE OF PRIVATE PROVISION

Privately owned facilities such as gyms and fitness centres are often referred to as 'crèches' because they have considerable facilities and equipment or generate enough profit to open numerous facilities across a region or the entire country. Members pay a high fee to receive the latest fitness equipment and technology, as well as other benefits.



ADVANTAGES

DISADVANTAGES

<ul style="list-style-type: none"> ✓ Provides a wide range of sport and physical fitness activities ✓ Cost of participation is heavily subsidised and sometimes free for some members, e.g. over 60s ✓ Allows equipment to be used and damaged ✓ Serves a large number of people, e.g. school provision of sport ✓ Private facilities built for sporting events might be purchased by the public sector 	<ul style="list-style-type: none"> ✗ Equipment available is usually cheap and low quality ✗ May be lacking in access to different sports and participants, e.g. minority activities and people with disabilities ✗ Funding is dependent on local government
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ADVANTAGES

DISADVANTAGES

<ul style="list-style-type: none"> ✓ Provides for specific sports or physical activities to meet individual needs ✓ Hosts a wide range of specialist equipment of the highest quality ✓ Can restrict membership so as to reduce numbers using facilities at any one time ✓ Access to professionals such as sports therapists and personal trainers, and other facilities such as crèches for children 	<ul style="list-style-type: none"> ✗ Cost of participation is very expensive, excluding many individuals ✗ Access to sports facilities can be restricted, e.g. only available to elite athletes ✗ Can be socially exclusive and discriminatory, e.g. sports such as golf and tennis have an image of exclusivity
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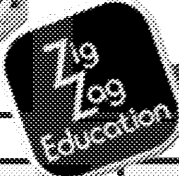


TYPES AND NEEDS OF SPORT AND PHYSICAL ACTIVITY

There is a wide range of individuals who have varying physical, social and mental health needs. These needs can be met by participation in sport and physical activity. Examples of different types of participant and their needs in sport and physical activity are covered below.

PARTICIPANTS OF DIFFERENT AGES

As sports and physical activity participants get older, their needs and reasons for taking part will change. This is influenced by how a person's physical abilities change over time.



Adults aged 65+ are more likely to develop coronary heart disease. High blood pressure is also more common in older adults.

PRIMARY SCHOOL (5-11 YEARS)	ADOLESCENTS (12-17 YEARS)	ADULTS (18-49 YEARS)	OLDER ADULTS (50+ YEARS)
<p>Participation at primary school age is mainly for enjoyment. Sport and physical activity plays a huge part in the social development of children. It is where they will make friends and develop key skills in communication and teamwork, as well as basic sporting skills.</p>	<p>Most adolescent participants will have one or two sports or activities that they dedicate time to. Therefore, needs at this age are usually centred on increasing fitness levels for that sport or activity. However, an increased awareness of body image around this age may also mean that exercise is used for mental health needs such as self-esteem.</p>	<p>A large number of adults continue to participate in sport to meet physical health needs such as improving fitness, body composition and sleep quality. Employment that typically comes with adulthood means that adults will often use participation as a means to meet mental health needs, such as decreasing stress levels, improving work-life balance, improving mood and decreasing risk of depression.</p>	<p>Long-term health conditions are more likely to develop in older age, so many older adults may participate to improve the symptoms of these conditions. Older adults who have retired may also choose to participate in sport to make up for the social side of work they may have lost. This will help to decrease loneliness and meet new people.</p>

For children and young people (aged 5-18), the recommendations are an average of:

60 MINUTES of moderate to vigorous physical activity per day, spread out across the week

Children should take part in a variety of activities and strength-based activities to develop their muscles and develop the bones.

For adults (including disabled and older adults), the government recommends:

150 MINUTES of moderate-intensity activity OR **75 MINUTES** of vigorous-intensity activity spread out across the week.

Other weekly recommendations are that:

- Adults perform **strength-building** activity on at least **two days**
- Disabled adults perform **strength** and **balance** activities on at least **two days**
- Older adults perform activities that improve **balance** on at least **two days**

GOVERNMENT RECOMMENDED GUIDELINES

The UK government uses empirical research to inform and update its guidance on the types and amount of physical activity that people of different ages and life circumstances should be doing to maintain a healthy, active lifestyle.



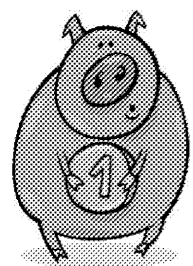
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COST, ACCESS AND TIME BARRIERS AND METHODS TO ADDRESS THESE

There are many factors that prevent people from participating in sports and activities. They may also be known as barriers, and they can be physical, financial, or time-related.

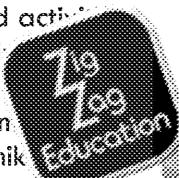


COST OF PARTICIPATION

A lot of sports and activities will cost someone money if they want to participate, but there is more than just the cost of the activity itself that can be a barrier. The clothing and equipment required, and the transport needed to get to the activity, all contribute to the overall cost.

COST OF CLOTHING

Many sports and activities require participants to wear a certain type of clothing. For example, someone wanting to go hiking will need full waterproofs, including jacket, trousers and shoes.



SOLUTION:

DISCOUNTS

Activity providers and sports clothing brands could provide discounts on clothing required to participate. For example, Mountain Warehouse regularly offers clearances on stock for participants to grab a bargain.

COST OF EQUIPMENT

Equipment is essential to participation in some sports and activities. Much of this will be off-limits if equipment is expensive. For example, an entry-level road bike can cost at least £200.



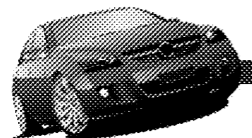
SOLUTION:

DISCOUNTS AND HIRING EQUIPMENT

Many brands offer discounts on equipment so people can buy it at a cheaper price. Activity providers may also offer equipment hire, e.g. golf clubs.

COST OF TRANSPORT

Many participants are unable to afford a car or regular public transport costs. Those who do have a car might still have to pay for car parking.



SOLUTION:

TRANSPORT CONCESSIONS / FREE PARKING

Local councils could offer transport concessions such as bus passes. Fitness centres could offer free car parking for members.

TIME AVAILABLE TO PARTICIPATE

Time available for a person to participate in sports and activities is often limited by their commitments to work, school, and family.



STUDY COMMITMENTS

The majority of teenagers are in full-time education. Homework and revision tasks after school limit their free time.



PROGRAMME EXTRA-CURRICULAR ACTIVITIES

Schools could schedule extra-curricular activities during school hours to reduce the time taken after school.

ACCESS TO SPORT AND ACTIVITIES

Access can refer to the types of activity, the facilities of the sport / activity provider, and the transportation available for someone to get to the activity.

REQUIREMENT OF RESOURCES

People with physical disabilities may require special equipment or gaining access to swimming pools.



EQUIPMENT AND ASSISTIVE TECHNOLOGY

A lot of swimming pools provide a pool hoist to lift those with physical disabilities directly into and out of the pool.

Braille and signage can help those with visual/auditory impairments.

LOCATION OF SPORT / PHYSICAL ACCESS

Sports and activity facilities and providers may be out of reach for many people who do not have a car or access to public transport.

LIMITED ACCESSIBLE TRANSPORT

People with disabilities may require special services such as wheelchair-accessible minibuses. A lack of these services could prevent people from participating.

PARTICIPANTS WHO MAY STRUGGLE WITH COST OF PARTICIPATION

- Individuals with low income (e.g. individuals with unemployment may struggle to pay for transport to earn money)
- Older adults or people who are forced to retire early may not be able to cover participation costs with their pension

Barrier

SOLUTION

✗ Memberships can be costly	<ul style="list-style-type: none"> ✓ Concessions and discounts on memberships ✓ Membership promotions (e.g. free month on sign-up)
✗ Prices for some activities may be expensive	<ul style="list-style-type: none"> ✓ Free participation (e.g. free swimming for under 5s) ✓ Competitions and giveaways

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SUMMARY OF BARRIERS TO SPORTS PARTICIPATION AND METHODS TO ADDRESS

Use this table to recap the barriers to participation and the possible methods to address each.

Cost	
<ul style="list-style-type: none"> ⊗ Clothing ⊗ Equipment ⊗ Transport 	<ul style="list-style-type: none"> ✓ Discounted pricing ✓ Equipment hire ✓ Free car parking
Access	
<ul style="list-style-type: none"> ⊗ Location ⊗ Limited accessible transport ⊗ Resources ⊗ Types of activity available 	<ul style="list-style-type: none"> ✓ Bus passes ✓ Cycle hire / schemes ✓ Taster days ✓ Assistive technology / equipment / facilities
Time commitments	
<ul style="list-style-type: none"> ⊗ Work ⊗ School ⊗ Family 	<ul style="list-style-type: none"> ✓ Crèche facilities ✓ Extended opening hours
Personal barriers	
<ul style="list-style-type: none"> ⊗ Body image ⊗ Lack of self-confidence ⊗ Parental/guardian influence ⊗ Limited previous participation ⊗ Low fitness levels ⊗ Extended time off ⊗ Concerns about worsening health 	<ul style="list-style-type: none"> ✓ Private changing facilities ✓ Relaxed clothing policy ✓ Embracing a variety of individuals (e.g. body shapes) ✓ Parent and child activity sessions ✓ Campaigns aimed at disadvantaged groups
Cultural	
<ul style="list-style-type: none"> ⊗ Single-sex sessions ⊗ Social norms ⊗ Clothing restrictions ⊗ Relatable role models 	<ul style="list-style-type: none"> ✓ Diversity of staff working at facilities ✓ Staff training in cultural awareness

PERSONAL AND CULTURAL BARRIERS AND METHODS TO ADDRESS

PERSONAL BARRIERS

Personal barriers include those that apply to the individual and their situation.

PARENTAL INFLUENCE

Children often have to look after themselves and their siblings. Parents or guardians may prioritise their own physical activity needs over their children's if they have little spare time.

Postnatal fitness classes and activities for mothers who have recently given birth to encourage them to get back into exercise.



JOINT PARENT AND CHILD SESSIONS

Providing activities for both the parent and child can allow both parties to benefit from taking part in sport or physical activity and create a familial culture of sport.

BODY IMAGE

Many people avoid sports participation as they feel ashamed of how their body may look compared to the 'perfect ideal'. Social media plays a part in creating a picture of what a sport participant should look like.

PRIVATE CHANGING FACILITIES

Private changing facilities can allow people who are self-conscious about their appearance to have privacy when changing.

RELAXED CLOTHING POLICIES

Relaxed clothing policies allow people to wear what they feel comfortable in.

CULTURAL BARRIERS

Cultural barriers concern issues to do with gender, sexuality, ethnicity and religion.

Ethnic minority – a group of people with a shared religion, culture or nationality who are under-represented within a given community.

SINGLE-SEX SESSIONS

There is a lower availability of sports clubs and leagues for females compared to males. Single sex sports and leagues are often run by males, which can be quite intimidating.

LACK OF DIVERSITY

Minority groups are under-represented in sport. As a result, they may feature less on promotional material, e.g. adverts for sports events and modelling clothing.

EXPOSURE OF RELATABLE MEDIA

Media channels can provide coverage of athletes from diverse cultures are able to relate to given sports.

FEMALE-ONLY SESSIONS

Fitness centres and other sports providers should advertise female-only activity sessions run by female coaches, so that women can feel more comfortable while exercising.

This could also include other gender-only sessions and is not just limited to females.

Discrimination – unfair treatment of certain people based on a given characteristic, such as skin colour.

Unjust treatment, whether it be based on gender, could prevent participation.

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SPORTS CLOTHING AND EQUIPMENT

Many sports have regulations around the clothing that performers are allowed to wear and the equipment they are allowed to use in order to participate. Some sports require specific clothing to stand out from performers, and also equipment to apply their authority. Many physical activities will also have guidelines.

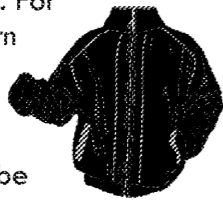
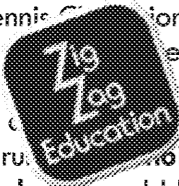
Clothing

Sports kits will be specific to the sport or activity, and sometimes the competition. In invasion games such as football and hockey, **different colour kits** are often worn to differentiate the two teams.

In the Wimbledon Tennis Championships, it is a tradition for players to wear all white.

For general physical activity, **weight training** in a gym or running outdoors, a **moisture-wicking T-shirt and shorts** would be an appropriate choice of **training clothing**. For team sports training, **bibs** are often worn when running drills.

When performing sports outdoors, appropriate **waterproof clothing** may be worn, such as jackets and bottoms which prevent undergarments from getting wet.



Footwear

Wearing suitable footwear is important for the player and the playing surface to improve performance and reduce the risk of injury by preventing slips.

Trainers are worn on **hard surfaces** such as tarmac, road or in an indoor sports hall. They can be worn for a range of **general physical activities**, including running, cycling and exercising at the gym.



Studded boots are worn in team sports on grass or artificial pitches to enhance **grip** with the surface. The type of stud used varies with playing surface, such as **rubber blades** on firm ground and **metal studs** on soft ground.

Sport-specific footwear includes **running spikes**, which are used solely in athletics to aid grip on rubber tracks. Other examples are **cycling shoes** with cleats that attach to pedals.



Sport-specific

Participation equipment is used as part in a specific sport.

- Tennis racquets
- Hockey sticks
- Footballs
- Golf clubs

Sport-specific equipment is used for certain sports. Examples include:

- Kayaks
- Road bikes
- Skis

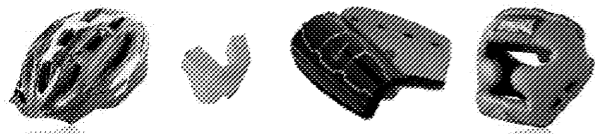
Scoring equipment is used to score goals. Examples include goalposts in rugby and hoops in basketball.

Equipment for **fitness training** is also sport-specific. Examples include dumb-bells, resistance machines and cardio machines such as treadmills.

Protection and safety equipment

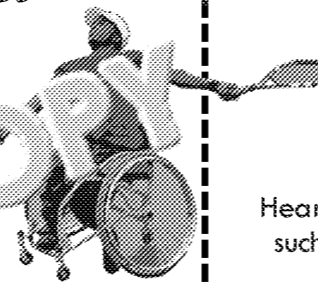
Helps **protect** the body from damage during activity and reduce the risk of **injury**. Examples include:

- **Head guards / helmets** protect against head injuries and reduce the risk of concussion
- **Gum shields** protect the gums and teeth
- **Ski goggles** protect the eyes from UV rays, or **swimming goggles** to protect against pool chlorine
- **Padding**, e.g. cricket pads, can protect against impact from the opposition and/or equipment
- **Floatation devices**, e.g. armbands or wetsuits, which reduce the risk of drowning
- **First-aid equipment**, such as band-aids, plasters, can help with minor injuries
- **Ice packs** help to reduce swelling and strains
- **Defibrillators**, which can be used in the event of someone going into cardiac arrest



Equipment for people with disabilities

Many people with **physical disabilities** require use of specifically designed **wheelchairs**. These are usually designed for **speed** by being **lightweight** and having **angled wheels** to improve **stability**. In sports that require **agility**, such as wheelchair tennis, basketball or rugby.



Equipment that **amplifies sound** is used by people with **visual impairment**. Most accessible fitness centres and sports venues will have **hearing loops** installed. This is a technological sound system that **reduces background noise** and **enhances speech sounds** through a hearing aid.

Equipment to assist people with **visual impairments** will vary by the sport or activity. For example, blind football uses a **sound ball** that makes a noise as it rolls across the playing surface, whereas visually impaired Boccia uses a tactile touch board which allows players to identify the location of the target ball.

Performance

Equipment is used to improve performance.

Wearable heart rate monitors are worn around the chest to provide accurate heart rate data.

Heart rate monitors are used in sports such as treadmills, which can pick up pulse rate.



A range of **mobile performance analysis** equipment is available, such as the Apple Watch, which allows users to track their performance using data from various sensors.

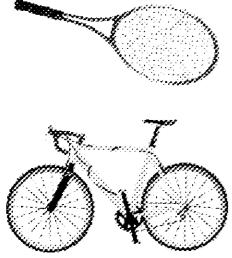
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Advances in Performance

Lightweight, composite materials have replaced heavier materials so that more power can be generated from less energy. Examples include:



- **Graphite** tennis racquets provide **more power and less vibration**.
- **Carbon-fibre** road bikes offer a **greater return** from each push of the pedal. Their **light weight** helps gain **speed** easily.

Technology has helped advance the design of equipment. For example, a golf driver head is designed with a **titanium** face, increasing the **propulsion** of the ball.

Limitation: Better-quality materials are more expensive. For example, a titanium golf club head can cost 10x more than an aluminium one.

Advances in Protection

Latest developments of cricket helmets allow for ventilation and the shells are made with **moulded plastic or man-made fibres**.



Grilles are made out of strong materials such as **fibreglass, titanium and carbon fibre**.



Some protective equipment has been designed with **aerodynamics** in mind. For example, cycling helmets are made with **polycarbonate or styrene foam** and are **streamlined** for aerodynamics.

Limitation: Better-quality equipment comes at a higher cost. For example, more expensive helmets contain a protective feature known as MIPS, which reduces rotational forces on the brain in the event of a fall.

Assistive Technology

for people with disabilities



Prosthetic amputations which use **carbon fibre**.

Sport-specific wheelchairs for sports to enhance speed with angled wheels and **lightweight materials**.

Limitation: Some assistive technology can be difficult to access and creates additional costs.

Assistive technology

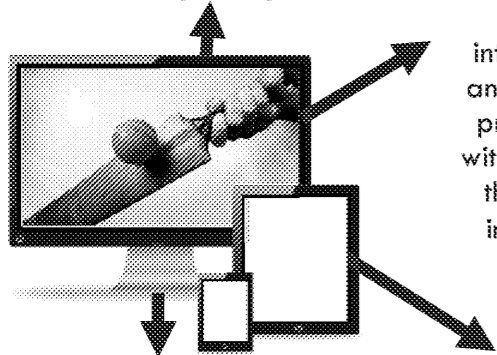
- **Hearing loops** for people with hearing impairments
- **Audio cues** or **visual impairments**

Performance analysis

The introduction of camera systems, wearable technology and specialist software in sport has allowed for a more in-depth analysis of performance, allowing performers to gain that extra 1%.

Action cameras

Allow for **instant replays** of sports events, and allow actions to be seen **close up** from **multiple angles**.



Sensors

Built-in sensors on sports equipment allow for more in-depth **analysis of sports movements**. For example, cricket bat sensors pick up information such as bat speed, angle and point of contact. This provides coaches and players with information used to analyse their performance and make improvements to their game.

Apps

Fitness apps are compatible with smartwatches and allow for deeper analysis of heart rate or activity levels. Some apps track calories and help someone achieve their diet goals.

GPS

Global positioning system devices are wearables worn in a bespoke vest on a player's back, and are used to track distance covered and speed of movement.

Limitations:

- Can be very **time-consuming** setting up equipment, analysing data and producing feedback or reports to performers.
- Some equipment and its software will require **specific training**.
- If equipment breaks or malfunctions it **costs** to get it fixed.
- Cheaper equipment may be **less accurate**.

SPORTS TECHNOLOGY

Advances in Officiating

Video-assisted decision-making



The **video assistant referee (VAR)** in football is the **television match official (TMO)** who assists the on-pitch official with a few key decisions.

Computer-assisted systems



Multi-camera systems track the movements of objects and performers in sport. For example, **Hawk-Eye** in tennis can assess whether a ball is in or out. It is also used for **goal-line technology** in football and **Hot Spot** in cricket.

Limitation: Only used in the top elite leagues, which means there may still be a **lack of fair play** in lower leagues and amateur sports.

Facilities

Snow domes are used to replicate conditions needed for sports such as ice hockey and snowboarding.

Altitude chambers



3G and 4G artificial grass pitches are used to replicate traditional grass pitches.

Indoor sports facilities provide the right amount of light and space to move on the field.

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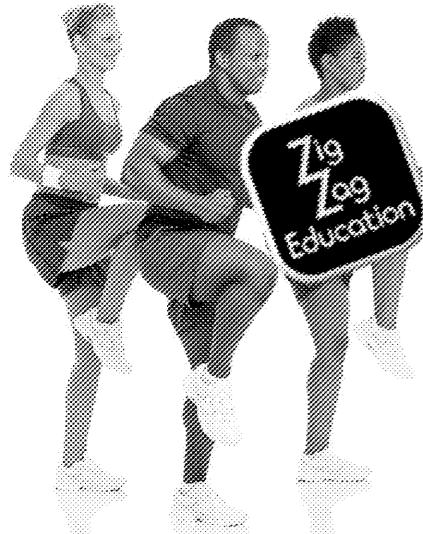


Planning a Warm-up

The warm-up is an essential aspect of any sport or activity session. Having a good understanding of the different components and types of activities involved, as well as how the body's systems respond to these activities, will help the participant get the best out of their session.

Warm-up

Helps to prepare the body both physically and mentally for the sport or activity. A warm-up should involve three key components:



Activities include:

- Jogging on the spot
- Skipping with a rope
- Performing an incline walk

1. Pulse raiser

Pulse raisers start with a gradual increase in the intensity of activity with the main aim of **increasing heart rate and blood flow** to the working muscles.

The body also experiences an increase in **breathing rate and depth** as the body demands more **oxygen**. At the same time as oxygen is delivered to the working muscles, **carbon dioxide is removed** and breathed out into the air.

Muscle temperature will also increase during the pulse raiser as the participant becomes more active. A gradual increase in intensity will increase the **pliability of muscles** and reduce the risk of **strains**.



2. Mobiliser

Mobiliser activities aim to **increase the range of movement** at the joint. They achieve this by increasing the production of **synovial fluid**, which **lubricates the joint** and frees movement.

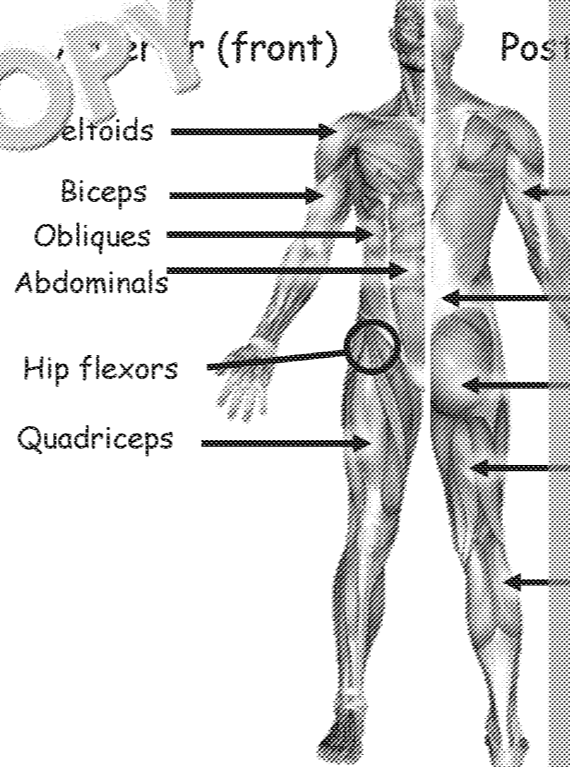
Mobilisers tend to start with small movements which progress into larger movements as the joint increases in flexibility. They result in a **slight drop in heart rate and breathing rate** as they are performed at a lower intensity compared to the pulse raiser.

Other activities include:

- Circling the arms for **shoulder** mobility
- Swinging the legs for **hip** mobility
- Rotating the ankles for **ankle** mobility

The example shown in the image is an **overhead reach**, used for **shoulder** mobility, e.g. in an upper-body weights session.

Main muscles of the human body



Below is a summary of the responses of the **cardiorespiratory** and **musculoskeletal** systems to the different components of the warm-up.

	Cardiorespiratory responses	Musculoskeletal responses
Pulse raiser	<ul style="list-style-type: none"> ▪ Increased heart rate ▪ Increased breathing rate/depth ▪ Increased oxygen delivery ▪ Removal of carbon dioxide 	<ul style="list-style-type: none"> ▪ Increased muscle temperature ▪ Increased muscle pliability ▪ Reduced risk of muscle strain
Mobiliser	<ul style="list-style-type: none"> ▪ Slight drop in heart rate ▪ Slight drop in breathing rate 	<ul style="list-style-type: none"> ▪ Increased production of synovial fluid ▪ Increased joint flexibility
Preparation stretches	<ul style="list-style-type: none"> ▪ Static stretches: slight drop in heart rate and breathing rate ▪ Dynamic stretches: maintained heart rate and breathing rate 	<ul style="list-style-type: none"> ▪ Increased muscle stretch ▪ Reduced risk of muscle injury

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Adapting and Delivering a Warm-up

The planning of a warm-up should consider how it is to be tailored to suit the types of participants, as well as the sport or activity. The delivery of a warm-up concerns the organisational aspects of activities, including demonstrations and the support provided to participants throughout.

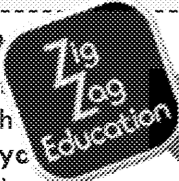
Adapting a warm-up

The types of participants and the sport or activity will determine the activities chosen for a warm-up. The trainer will decide to choose, and how these activities will be adapted to suit the specific needs. Take a look at the different ways a warm-up can be adapted to suit the needs of different participants and activities.

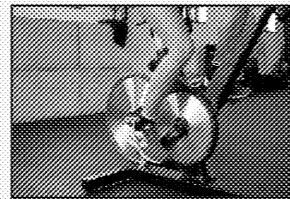
FOR DIFFERENT PARTICIPANTS

Varying the intensity

Participants with **low fitness levels**, such as **adolescents and young adults**, will be able to perform activities at a higher intensity. The intensity should be lowered for participants with **long-term health conditions** such as high blood pressure as conditions such as this may be **aggravated** by intense activity.

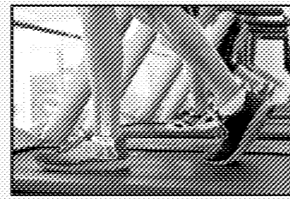


Low-impact option such as using an exercise bike



Low-impact options

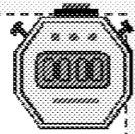
Older participants are more likely to have **joint issues**, which means **low-impact** pulse-raising activities such as cycling or using a cross-trainer will be more suitable than running on a treadmill. **Static** stretches may also be chosen over **dynamic** stretches as they tend to be lower impact.



High-impact option such as treadmill running

Varying the timing

Shorter warm-ups may be planned for **children** or participants with **learning difficulties**, who may struggle to maintain **focus** and just want to get on with the main activity. Longer warm-ups may be planned for **older adults** or **beginners** to ensure that they are fully warmed up and ready to go.



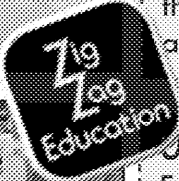
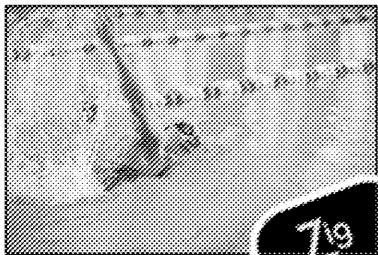
Type of stretching

Simple stretches focusing on a single muscle group should be used for **beginners**, whereas **compound** stretches can be used with more **experienced** participants.

FOR DIFFERENT SPORTS AND ACTIVITIES

Specific movements

The warm-up should replicate the **movements and actions** of the sport or activity. For example, **short lengths** of the **passing** drill during a netball session, or **passing and catching** during a netball game.



Use of specific equipment

Equipment that is used in the main activity should be introduced in the warm-up as a form of **familiarisation** for the main activity. For example, a **hockey player** should practise with their **stick**. This can be performed as part of the pulse raiser.



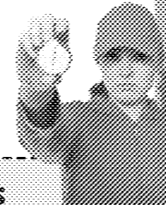
Specific muscles

The **preparation stretch** should target parts of the body that are most used in an activity; for example, the **leg muscles** in **running** activities and the **upper-body muscles** in **throwing** activities.



Delivering a warm-up

There are different ways to deliver an effective training session.



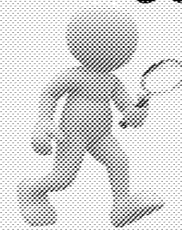
Timings

The warm-up should be planned for the category of participants. A warm-up for young children **overruns** may lose control of their **focus**.

Demonstrations

Session leaders should demonstrate to participants how to perform activities. This can be done alongside **instructions** so participants receive **visual** and verbal information.

SUPPORT



Observation

The leader should **supervise** participants and provide **support** where necessary. For example, if they may not have fully understood instructions, they may be performing an activity incorrectly.

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TYPES AND PROVIDERS OF SPORT AND PHYSICAL

There are many different types of sports and physical activities that people participate in – far too many to cover on a single sheet of A3 paper! Each sport and physical activity can generally be placed within one of four categories (see below).

However, there is a lot of crossover between these categories as some sports can be competed in as individual or team events, just like many outdoor activities are participated in for the purpose of improving physical fitness. Some sports can also be participated in as forms of outdoor or physical fitness activities. Below we will cover each category in more depth and provide examples of sports and activities in each category, as well as drawing links between them.

KEY TERMS

Sport – any competitive physical exertion involving a skill and a national governing body.

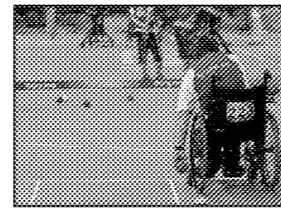
Physical activity – any movement that requires energy expenditure.

INDIVIDUAL SPORTS

Where one person competes against another person.

Kyler is a 2-year-old child who uses a wheelchair. Identify three sports that Kyler could take part in other than Boccia.

- 1.
- 2.
- 3.



Disability sports such as Boccia where players must throw their ball so that it lands close to a target ball.



Golf is competed in as an individual sport in competitions such as the British Majors, but it is also a common physical fitness activity for older participants.

PHYSICAL FITNESS

Physical fitness is the ability to perform different body systems to maintain good health conditions.

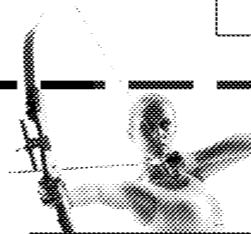
Cardio:

TEAM SPORTS

Where two or more individuals compete against another partnership or team to work towards the same goal (usually winning).



Some sports can be participated in as both individual and team activities.



Many outdoor activities can be competed in as individual or team sports.

Kimberley has just moved to a new area and is looking for a new sport to participate in. Identify five team sports that Kimberley could participate in other than Australian football.



Football teams consist of attackers, midfielders, defenders and a goalkeeper.

- 3.
- 4.
- 5.

- 1.
- 2.
- 3.

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BENEFITS OF TAKING PART IN SPORT AND PHYSICAL ACTIVITY

BENEFITS OF TAKING PART IN SPORT AND PHYSICAL ACTIVITY

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C
Jacqueline is deciding whether to join her friends in a treadmill running class at their local leisure centre. Her friends are trying to persuade her by informing her of the benefits it will have.
Justify **three** benefits that taking part in a fitness activity such as treadmill running would have for Jacqueline.

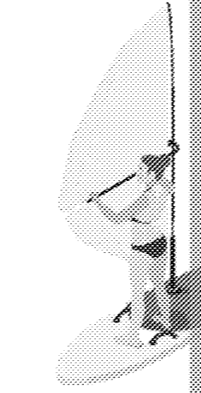


BENEFITS OF TAKING PART IN PHYSICAL FITNESS ACTIVITIES

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TYPES OF PROVIDERS OF SPORT AND PHYSICAL ACTIVITY

Provision of sports and physical activity can be found across the entire world. The levels and types of **provision** will vary by country and depend on the amount of government investment in the health and fitness industry. The three key sectors that provide the opportunities to participate are the **public**, **private** and **voluntary** sectors. Each has different advantages and disadvantages in terms of their funding source, aims, quality of provision and accessibility to different groups of people.

Mustafa has moved to university and is looking for a gym he can attend in the suburban area of the city he is living in. He has found a council-run leisure centre in his local area.

- Identify the type of provision in Mustafa's local area.
- Complete the table to identify the characteristics of the type of provision in Mustafa's local area.
- Identify two advantages and two disadvantages of the type of provision in Mustafa's local area.

Lydia is looking to take up tennis. The tennis courts available in her local area are at a Virgin Active leisure centre.

- Identify the type of provision in Lydia's area.
- Complete the table to identify the characteristics of the type of provision in Lydia's area.
- Identify two advantages and two disadvantages of the type of provision in Lydia's area.



CHARACTERISTICS

Source of funding	
Main aims	
Quality of provision	
Accessibility	



CHARACTERISTICS

Source of funding	
Main aims	
Quality of provision	
Accessibility	



ADVANTAGES	DISADVANTAGES
✓	✗
✓	✗



ADVANTAGES	DISADVANTAGES
✓	✗
	✗

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TYPES AND NEEDS OF SPORT AND PHYSICAL ACTIVITY

There is a wide range of individuals who have varying physical, social and mental health needs. These needs can be met by participation in sport and physical activity. Examples of different types of participant and their needs in sport and physical activity are covered below.

PARTICIPANTS OF DIFFERENT AGES

As sports and physical activity participants get older, their needs and reasons for taking part will change. This is influenced by how a person's physical abilities change over time.



Jose is a 7-year-old boy who has recently joined his school football team.

For each of the below scenarios, justify a physical, mental and social health need that the activity could help meet.



Francesca is a 16-year-old female who swims in the morning.



Jina is a 35-year-old female who works for an accountancy firm. She attends the gym in the evenings.

Joe is a 55-year-old male with type 2 diabetes. He has been advised to take part in sport or physical activity. At the same time, he realises that he needs to find a way to meet his needs.

Identify a sport or an activity that Joe could participate in and justify how it would meet his needs.

Labib is a 73-year-old male who is recently retired. He currently takes part in no sport or physical activity. His daughter fears that he is becoming socially isolated, as his work used to be a big part of his social life.

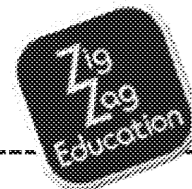
Identify a sport or an activity that Labib could take part in and justify how it would meet his needs.

Adults aged 65 and over are more likely to develop coronary heart disease. High blood pressure is also more common in older adults.

PRIMARY SCHOOL (5–11 YEARS)	ADOLESCENTS (12–17 YEARS)	ADULTS (18–49 YEARS)	OLDER ADULTS (50+ YEARS)
Physical:	Physical:	Physical:	
Mental:	Mental:	Mental:	
Social:	Social:	Social:	

List the physical activity guidelines for children and young people (aged 5–18).

List the physical activity guidelines for older adults (including adults with disabilities).



GOVERNMENT RECOMMENDED GUIDELINES

The UK government uses empirical research to inform and update its guidance on the types and amount of physical activity that people of different ages and life circumstances should be doing to maintain a healthy, active lifestyle.

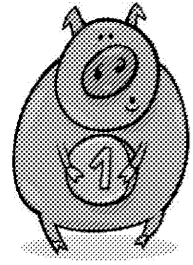
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COST, ACCESS AND TIME BARRIERS AND METHODS TO ADDRESS THESE


There are many factors that prevent people from participating in sports and activities. They may also be known as barriers, and they can be physical, financial, or time-related.




COST OF PARTICIPATION

Toby is a 34-year-old male who is on a low income. He used to enjoy playing golf but can no longer afford to do so. Identify three potential cost barriers to Toby's participation and a means to address each.


BARRIER






BARRIER

SOLUTION:



BARRIER

SOLUTION:



PARTICIPANTS WHO MAY STRUGGLE WITH COST OF PARTICIPATION

- Individuals with disabilities, e.g. individuals with visual impairment may struggle to find employment to earn money
- Older adults or people who are forced to retire early may not be able to cover participation costs with their pension

TIME AVAILABLE TO PARTICIPATE

SOLUTION

ACCESS TO SPORT AND ACTIVITIES

BARRIER

SOLUTION:



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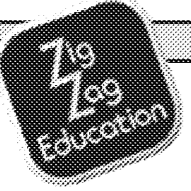
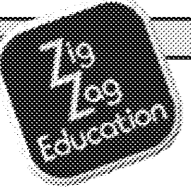


SUMMARY OF BARRIERS TO SPORTS PARTICIPATION AND METHODS TO ADDRESS

Complete the table to recap all of the barriers and potential solutions.



Barrier	Solution
Cost	
Access	
Time commitments	
Personal barriers	
Cultural barriers	



PERSONAL AND CULTURAL BARRIERS AND METHODS TO ADDRESS

PERSONAL BARRIERS

Charlotte is a 20-year-old female who wants to take up swimming. However, she has several personal barriers that prevent her from participating.

Identify two potential personal barriers to Charlotte's participation and a method that could be used to address each.

BARRIER _____

BARRIER _____

SOLUTION _____

SOLUTION _____

CULTURAL BARRIERS

David is a 31-year-old male. He believes his Jewish religion poses many barriers to participation.

Identify two potential cultural barriers that David's religion may have for participation and a method that could be used to address each.

BARRIER _____

SOLUTION _____

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SPORTS CLOTHING AND EQUIPMENT

Many sports have regulations around the clothing that performers are allowed to wear and the equipment they are allowed to use in order to participate. Some sports require specific clothing to stand out from performers, and also equipment to apply their authority. Many physical activities will also have guidelines.

Clothing


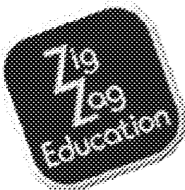
Isaac is an 18-year-old male who has joined an athletics club. He is aiming to train for the 1500 m.

A

- a) Justify **two** items of clothing that Isaac will need to take part in athletics training.
- b) Justify **two** pieces of footwear that Isaac may use for athletics training.

1.


2.



Footwear

1.

2.



Sport-specific

Natalie is a 10-year-old female who is going to take part in cricket. She must bring all appropriate protective and safety equipment.

- a) Justify **two** items of protective equipment that Natalie must bring to take part in cricket.
- b) Justify **two** items of sport-specific clothing that Natalie must take part in cricket.

1.

2.

Officiating equipment

India is a 15-year-old female who has taken up officiating in rugby.

C

Justify **two** pieces of equipment that India will need to officiate a game of rugby.

1.

2.

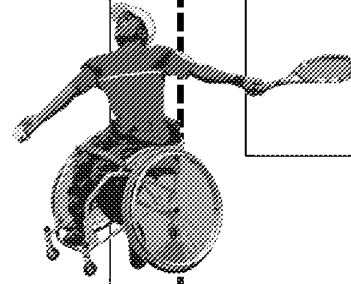


Equipment for people with disabilities

Hollie is a 28-year-old female with a physical disability. She is hoping to join a basketball team after enjoying watching it at the Paralympics.

D

- a) Justify one assistive technology that will allow Hollie to participate in basketball.
- b) Justify **two** pieces of performance analysis equipment that will help Hollie when training for basketball.



Performance

1.

2.

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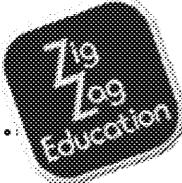
Advances in Performance

Natalie is a 10-year-old female who is joining a cricket club. The club has asked that she bring all appropriate protective and participation equipment she needs to take part.

- a) Justify **two** technological designs of protective equipment that will benefit Natalie in cricket.
- b) Justify **two** technological designs of performance equipment that will benefit Natalie in cricket.
- c) Identify **one** limitation of protective and performance technology for Natalie.

1.

2.



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Limitation:

B

Advances in Protection

1.

2.



India is a 15-year-old female

- a) Justify **two** pieces of
- b) Identify **one** limitation

1.

2.

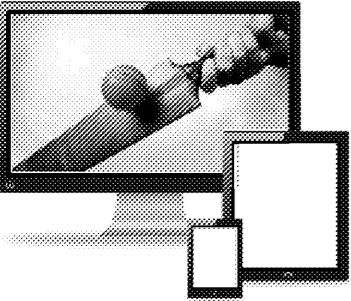


Limitation:

Performance analysis

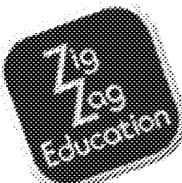
Lucy is a 22-year-old female who competes in Para-athletics sprint events with a prosthetic.

- a) Justify how the technological design of prosthetics will benefit Lucy when participating.
- b) Justify how the technological design of **one** piece of performance analysis equipment will benefit Lucy when training or competing.
- c) Identify **one** limitation of assistive technology and performance analysis technology for Lucy.



1.

2.



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Limitation:

D

SPORTS TECHNOLOGY

Assistive technology for people with disabilities

Force Replication

Dwain is training for the French Alps.

- a) Justify **one** technological benefit Dwain will experience when training for the challenge.
- b) Identify **one** limitation



Limitation:

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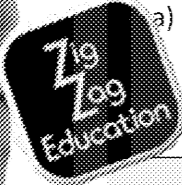


Planning a Warm-up

The warm-up is an essential aspect of any sport or activity session. Having a good understanding of the different components and types of activities involved, as well as how the body's systems respond to these activities, will help the participant get the best out of their session.

Warm-up

Helps to prepare the body both physically and mentally for the activity ahead. A warm-up should involve **three** key components:



1. Pulse raiser

a)

b)

c)

Design a warm-up plan for each category of participants:

- a) A group of aged 5-11 taking part in a football activity session.
- b) A group of adolescents (aged 12-17 years) with learning disabilities, taking part in a bowls session.
- c) A person training for a session in the gym for someone with coronary heart disease.

2. Mobiliser

a)

b)

c)

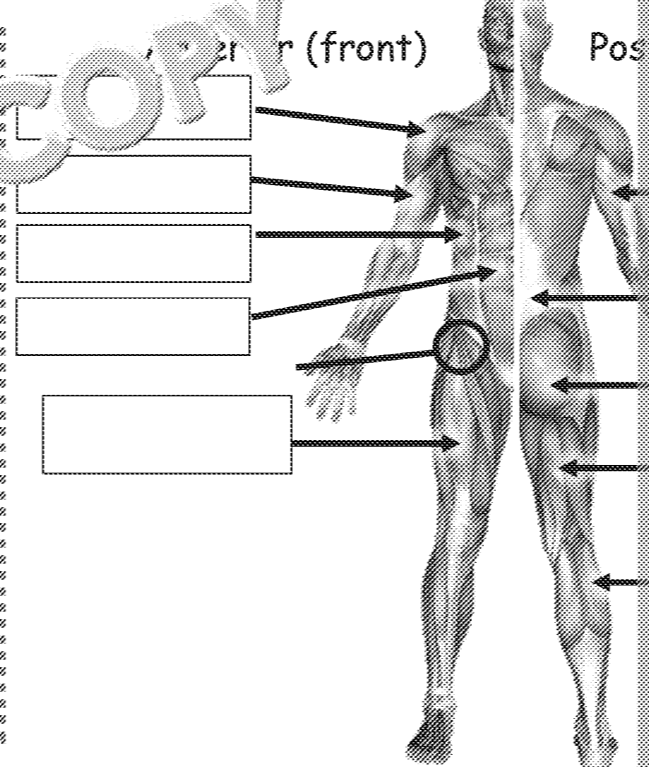


List **two** responses of the cardiorespiratory and musculoskeletal systems to each component of the warm-up.

Below is a summary of the responses of the **cardiorespiratory** and **musculoskeletal** systems to the different components of the warm-up.

	Cardiorespiratory responses	Musculoskeletal responses
Pulse raiser	1. 2.	1.
Mobiliser	1. 2.	1. 2.
Preparation stretches	1. 2.	1. 2.

Main muscles of the human body



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Adapting and Delivering a Warm-up

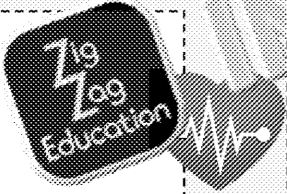
The planning of a warm-up should consider how it is to be tailored to suit the types of participants, as well as the sport or activity. The delivery of a warm-up concerns the organisational aspects of activities, including demonstrations and the support provided to participants throughout.

Adapting a warm-up

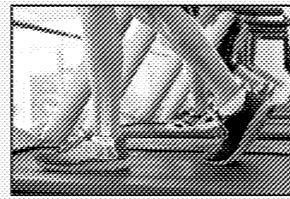
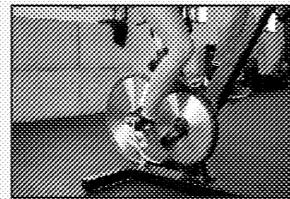
The types of participants and the sport or activity will determine the activities chosen for a warm-up. The coach or teacher will decide to choose, and how these activities will be adapted to suit the specific needs. Take a look at the different ways a warm-up can be adapted to suit the needs of different participants and activities.

FOR DIFFERENT CATEGORIES OF PARTICIPANTS

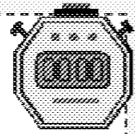
Intensity



Low- or high-impact options



Timing



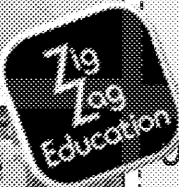
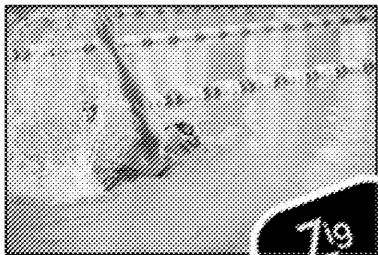
Using **one** of your warm-up plans for the categories of participants on page 9, describe **three** ways you would adapt a warm-up if you were to deliver:

- The same activity with a different category of participant.
- A different activity.

A

FOR DIFFERENT SPORTS AND ACTIVITIES

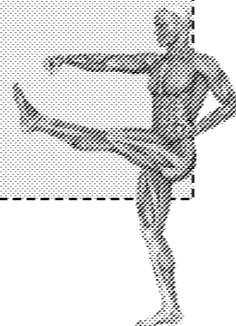
Specific movements



Use of specific equipment

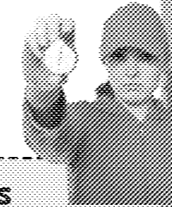


Specific muscles



D

There are different ways to deliver a warm-up. Consider the following effective training methods:



Timings

Demonstrations

SUP

Describe how you would consider supporting participants in each of the following when delivering the warm-up:



Observation

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