




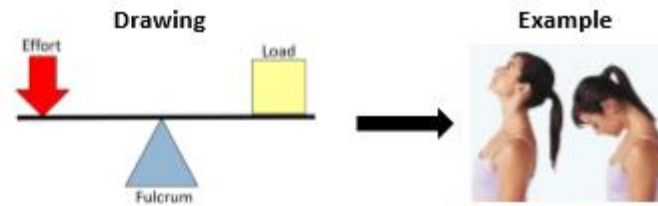
GCSE Physical Education – Movement analysis

Levers – a rigid bar that moves around a pivot point with force applied to it.

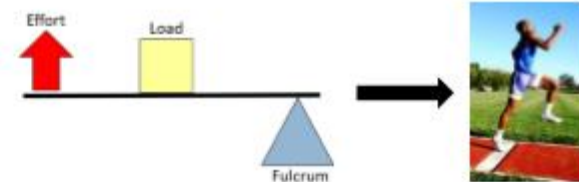
Fulcrum (F)	Effort (E)	Load (L)
A fixed pivot point 	The source of energy that will be applied 	The weight/resistance to be moved 

Classes of lever

First class lever:



Second class lever:

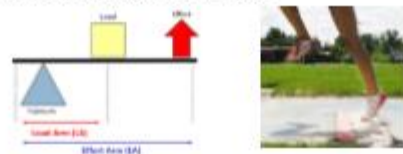


Third class lever:



Mechanical advantage

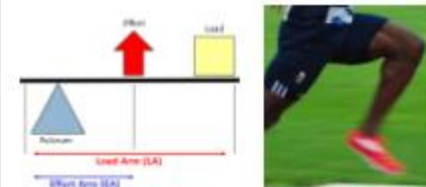
This is where a lever's **effort arm** is greater than its **load arm**.




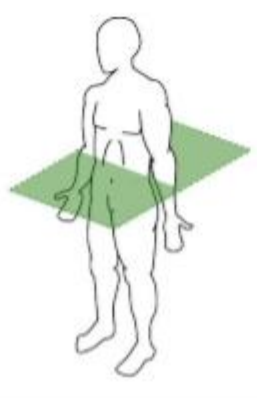
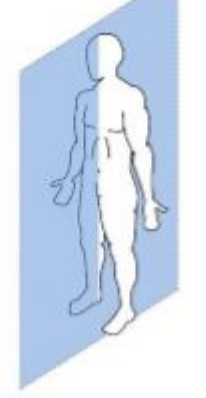
Large loads can be moved with limited effort.

Mechanical disadvantage



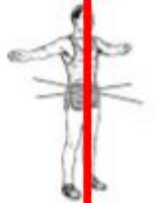



This is where a lever's **load arm** is longer than its **effort arm**.



Planes – imagery lines that divide the body into two.

Frontal plane	Transverse plane	Sagittal plane
A vertical plane but this divides the body into front and back . 	A horizontal plane that divides the body into upper and lower halves . 	A vertical plane that divides the body into right and left sides . 

Axes – imagery lines that the whole body turns around.

Sagittal axis	Vertical axis	Frontal axis
Runs through the body horizontally from the back to front.  Example: Cartwheel 	Runs through the body vertically from the top to bottom.  Example: Full twist 	Runs through the body horizontally from the left to right.  Example: Somersault 

Immediate Effects of Exercise on the Body (During Exercise)

<u>Respiratory System</u>	<u>Effect</u>	<u>Circulatory System</u>	<u>Effect</u>
Increased Respiratory Rate	More air can be breathed in per breathe (tidal volume) and per minute (minute volume = tidal volume x respiratory rate). This means more oxygen can be passed into the blood stream and taken to the heart AND more carbon dioxide can be breathed out.	Increased Heart Rate	More blood carrying oxygen is sent to your working muscles so that more energy can be produced. ALSO due to more energy being produced, more carbon dioxide will be produced which needs to be taken back to the lungs so that it can be removed from the body.
Increased Tidal Volume		Increased Stroke Volume	
Increased Minute Volume		Increased Cardiac Output	
<u>Muscular System</u>			
- Muscles create HEAT when they contract. (vasodilation)		- Performers look red as blood flows closer to the skin	
- Performer sweats to help cool them down.			

Short Term Effects of Exercise on the Body (24 – 36 hours after exercise)

<u>Fatigue</u> : A day after strenuous exercise muscles often feel heavy and tired.	<u>Dizziness and lightheadedness</u> : People can feel dizzy and light headed due to low blood sugar levels.
<u>Nausea</u> : People can feel sick due to over exerting themselves during an activity.	<u>Delayed onset muscle soreness (DOMS)</u> - Pain or stiffness in muscles a day or two after exercise. - Caused by tiny tears in muscle fibres leading to swelling. Muscles are supposed to tear; they repair stronger which is the main benefit of training. DOMS is not cramp – cramp is a painful contraction of muscle caused by fatigue, often linked to dehydration and loss of minerals due to sweating.

Long Term Effects of Exercise on the Body (Months and Years of exercising)

<u>Changes in Body Structure</u> <ul style="list-style-type: none"> Reduced body weight – fat stores are used to create energy (fat is burnt off) Increased size of muscle (Muscular Hypertrophy) – muscles get bigger and stronger 	<u>Musculoskeletal System</u> <ul style="list-style-type: none"> Increase in muscular strength – weight training (anaerobic) Increase in muscular endurance – circuit training (repeated actions) Increase in flexibility – due to repeated movements at a joint and the increased levels of synovial fluid within the joints. Tendons and ligaments get stronger – stabilise the joint
<u>Other Components of Fitness</u> <ul style="list-style-type: none"> Increase in speed – rapid anaerobic movements Increase in cardiovascular endurance – continued aerobic movements which cause capillarisation around muscles and alveoli, increase in strength of diaphragm, intercostal muscles or sternomastocleidoid which then creates a larger chest cavity so more alveoli can be used. 	<u>Cardiorespiratory System</u> <ul style="list-style-type: none"> Increase in Stroke Volume – larger heart (Hypertrophy) Heart rate can be increased for a longer period of time Resting heart rate is reduced - Bradycardia

FIVE SOCIAL GROUPS YOU NEED TO KNOW

1) Gender – main focus of women’s participation.

There are a number of barriers that affect participation rates for women:

Stereotypical Views:

- Women lack the strength or endurance to play the same sports as men.
- Women who play sport are not feminine.
- Playing sport prevents a women's ability of giving birth.
- Women who play sport develop muscles and become more ‘man like’. This leads to female performers having their sexuality questioned.
- A women's role is as a carer and manager of the home.

Due to these stereotypical other barriers have been created which put some women off playing sport. They are:

Male Dominated Culture in Sport:

Women have less media coverage, receive less money and have less role models to look up to.

Support from Peers and Family:

Women get less support from their peers and family. Young girls often need to choose between playing sport or being part of a friendship group, and are put under pressure by their peers to be more like them.

Body Image:

The media portrays women as feminine and objects of desire. Women who choose to play sport do not follow these views and as a result their sexuality is often questioned.

Facilities / Funding:

Facilities for women have developed more slowly than those for men. There are less clubs / sports for women to get involved with. Funding for women's sport is also much less then their male counterparts, however this is gradually improving.

Stereotype: Widely held but fixed and oversimplified idea of a particular type of person e.g. females.

Social Groups: People who interact with one another, share similar characteristics and have a sense of unity / togetherness.

Engagement Patterns: Trends / tendencies in involvement.

Discrimination: The unjust or prejudicial treatment of different groups of people, especially on the grounds of race, age or gender.

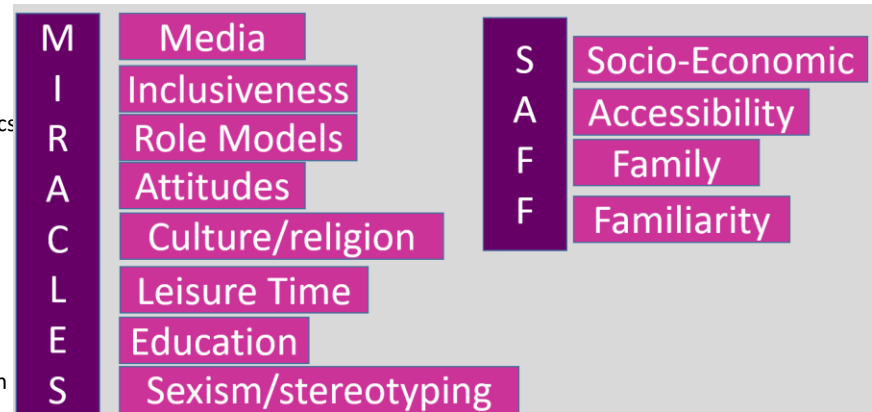
Socio-cultural influences and Commercialisation

4)Age

- All school children participate in sport but when they leave school participation often drop. This is referred to as ‘post-school drop out’
- Older people often take part in less sport due to family and work commitments as well economic issues which they might have.
- Also as people get older their fitness levels often decline, resulting in participation levels dropping.

Post-school drop out:

The reduction in participation levels in young adults after they leave full-time education



2) Ethnicity

ETHNIC GROUP

A group of people who share common origins – be they racial, religious or cultural

Barriers Affecting Participation

- Live in poorer areas in the country – less facilities / lack of money for equipment
 - Sporting prejudices / stereotypes that already exist e.g. African-Caribbeans are seen to have less swimming ability.
 - Family commitments resulting in less time to participate in sport.
 - In many sports there are a lack of role models for black / ethnic people to look up to and aspire to.
 - Discrimination – Many people don’t take part in sports as they are afraid of being racially abused.
- Examples of how ethical issues effects a person’s participation?**
- Muslim women have to keep their bodies covered up preventing them from doing sports e.g. gymnastics / swimming.
 - During Ramadan people are not allowed to eat food during daylight hours. This means that during the day they may have little energy when taking part in sports. Also they must eats at night instead of train.
 - Muslim / Islamic men are expected to pray at there local mosque every day. This reduces the amount of time they can spend playing sport.

3) Disability

A physical or mental condition that limits a person’s movements, senses or activities.

Three main categories of disability:

-Mobility impairments -Sensory impairments -Mental impairments

Having a disability can limit the type of physical activity that you can take part it. Many sports centres nowadays have facilities for disabled people which has led to a increase in opportunities to take part.

What prevents disabled people from taking part in sport?

- Lack of facilities in the local area.
- Lack of clubs / teams.
- Lack of media coverage (apart from when the Paralympics is on)
- Knowledge of activities available in local area e.g. advertising.

Adapted Sports: Competitive sports for individuals with disabilities. While they often parallel. Existing sports played by able-bodied athletes, there may be some modifications in the equipment and rules to meet the needs of the participants.

Benefits of Integration

- Reduced possibilities of discrimination
- Less stereotyping
- Fewer barriers

Integration: Involving the full participation of all people in community life, but usually referring to disabled people.

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Barrier to participation: An obstacle that prevents a group within society from participating in sport or physical activity and therefore reduces overall levels of participation.

5) Family / Friends / Role models

Family

Positive:

- Parents will encourage their children to take part in certain sports / activities
- Children rely on their parents to get them to the sport / activity.
- Parents / brothers or sisters may play a sport which you may watch resulting in you getting involved in.

Negative:

- Some parents may not provide support or encouragement due to safety concerns over participation or lack of interest in sport or may have had a negative experience of the sport (earlier in life).
- Some parents may pressure young people to concentrate on academic work rather that practical physical activity.
- Some parents cannot supply financial support / in the form of equipment or kit / coaching / transport.

Friends

Positives:

- People are more likely to play sports / for teams that their friends play for.
- Peers / friends often encourage other children to take part in their sport as they understand / appreciate the benefits that can be gained from the activities.

Negatives:

- Peers might not be interested in the activity. As they are not interested / they may encourage friends not to train / take part in sport.
- Verbally pressure friends by saying they are better going out with them or that they will not be their friend.

Role Models

What is a role model? A person looked up to by others as an example to be copied.

Positive:

- Encourage people to play sports so by increasing numbers participating.
- Their good behaviour can positively effect the behaviour of children who look up to them.

Negative:

- Poor behaviour can be seen by children as the correct way to behave.
- Can lead to people copying behaviour e.g. taking drugs, swearing at officials.