TEL PE Revision

Revision Series 2023

AQA GCSE Physical Education
Paper 1

• Notes pages •

The EverLearner

How to use this revision session and notes

- Complete this document when doing the live or on-demand revision shows.
- Have the National Mock Exam to hand and, ideally, your completed, marked version of it.
- Have the exam infographics to hand. These will be referred to throughout the show.
- Focus on the skills that James is presenting as much as the content. In most cases, students have a knowledge of the topic but struggle to respond to the command in the question. This is a focus of our revision.
- Complete the notes spaces as extensively as possible and, if necessary, return to the show to complete it more than once in order to make the fullest notes possible.

My ticklist:

- ☑ Notes pages
- ☑ Exam infographics
- ☑ Exam paper
- ☑ Exam mark scheme
- ☑ Exam model answers

Performer profiles

Use these performer profiles when making examples and developing your A02 skill. The list is not exhaustive and you are encouraged to use your own examples as well as these ones.

Josh

Basic Details
Age: 19
Sport: 100m Sprint
Level: Olympic Podium Potential

Tom

Basic Details
Age: 43
Sport: Tennis (singles and doubles)
Level: Novice

Kate

Basic Details
Age: 17
Sport: Triathlon
Level: Club

Laura

Basic Details
Age: 15
Sport: Gymnastics (Artistic)
Level: National

Julie

Basic Details
Age: 26
Sport: Netball (GD, GK)
Level: Semi-professional/National

Carlos

Basic Details
Age: 35
Sport: Wheelchair basketball
Level: Ex-national team

Material covered **in the National Mock Exam**

- ➔ Green denotes content to be covered in this session.
- ➔ (#) denotes number of marks on Paper 1 since 2018.
- ➔ Yellow denotes skills that will be covered in the session and that are also covered in the National Mock Exam and model answers.

3.1.1 Applied anatomy & physiology

- Identification of bones (9)
- Functions of the skeleton (12)
- Muscles of the body (6)
- Types of synovial joints (4)
- Movement at synovial joints (10)
- Antagonistic muscle pairs (11)
- Blood vessels (7)
- Structure of the heart (3)
- Cardiac measurements (1)
- Aerobic and anaerobic exercise (13.5)
- Recovery from exercise (4.5)
- Short-term effects of exercise (11)

3.1.2 Movement analysis

- Levers (15)
- Analysis of movement (15)
- Planes and axes (9)

3.1.3 Physical training

- Components of fitness (56)
- Fitness testing (29)
- Measuring training intensities (3)
- Injury prevention (8.5)
- Warm-up and cool-down (13)

3.1.4 Use of data

- Quantitative data (2)
- Analysis and evaluation of data (11)

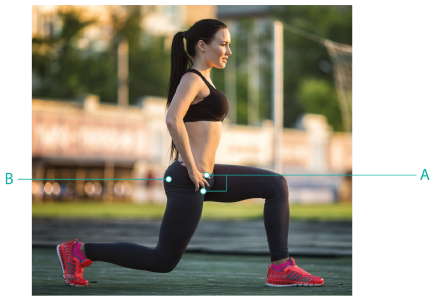
Section 1: Functions of the skeleton

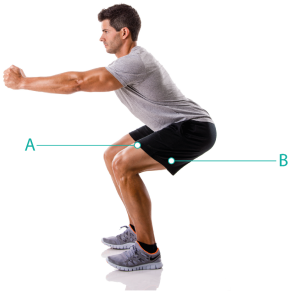
From A01 to A02: From knowing the functions to applying them accurately

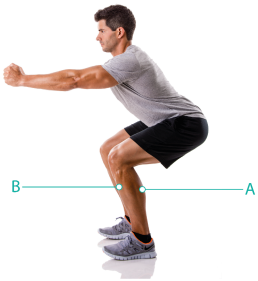
Knowing your Functions of the Skeleton is not enough. You must be able to apply them all to the impact on performance. Complete these gaps in this table. You may choose to use the performer profiles or your own examples. However, you must stress the **impact** of each function.

Functions of the skeleton	Support	Such as the lower body when landing from a _____ or the head when _____.
	Protection of vital organs by flat bones	Cranium protects the brain during a rugby tackle.
		_____ protect the lungs when being struck in a _____ bout.
		Sternum protects the _____ during a fall from the high bar in _____.
		_____ protect the spinal cord during a crash in motor sport.
	Movement	Leverage such as the ankle acting as a 2nd class lever during plantar flexion and providing mechanical advantage when jumping for a rebound in basketball.
	Structural shape and points of attachment	Muscles contract via tendons onto bones such as the _____ tendon pulling on the radius to cause elbow _____.
		Posture including sporting posture - upright posture, running posture, curve of the spine.
	Mineral storage	Calcium for bone strength allowing more _____ contractions against the bones during _____.
		Phosphorous for ongoing muscle _____ during an Olympic _____ event without fatigue.
		Iron for _____ which then transports oxygen to be utilised in _____ respiration during a triathlon.
	Blood cell production	In the bone marrow or long and flat bones
		RBCs for O_2 and CO_2 transport making aerobic respiration more efficient during a _____.
		WBCs for immunity keeping performers healthy and training regularly.
		Platelets (cell fragments) for clotting when the skin is broken during a _____ from a BMX bike (race).

Section 2: Antagonistic muscle pairs

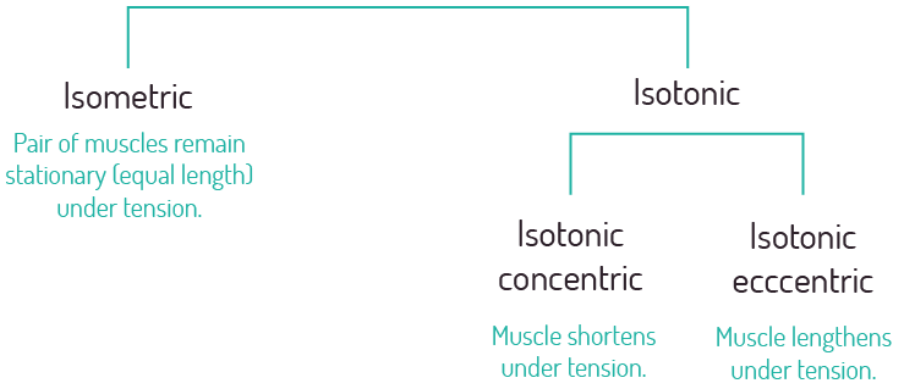






Notes

Types of contraction



Notes

Section 3: Analysis of Movement (including Movement at Synovial Joints)

Elbow action in a push-up

Phase A

Phase B

Movement	Joint	Phase	Prime mover	Contraction type
Press-up	Elbow	Upward	Triceps	Isotonic concentric
		Downward	Triceps	Isotonic eccentric

Notes

Elbow action in a throw-in

Movement	Joint	Phase	Prime mover	Contraction type
Throw in	Elbow	Preparation	Biceps	Isotonic concentric
		Release	Triceps	Isotonic concentric

Notes

Hip, knee and ankle action in running

Movement	Joint	Phase	Prime mover	Contraction type
Running action	Hip	Drive		Isotonic concentric
		Recovery	Hip flexors	
	Knee	Drive		Isotonic concentric
		Recovery		Isotonic concentric
	Ankle	Drive	Gastrocnemius	Isotonic concentric
		Recovery		

Notes

Hip, knee and ankle Action in kicking

Movement	Joint	Phase	Prime mover	Contraction type
Kick action	Hip	Preparation	Gluteals	Isotonic concentric
		Kicking	Hip flexors	Isotonic concentric
	Knee	Preparation	Hamstrings	Isotonic concentric
		Kicking	Quadriceps	Isotonic concentric
	Ankle	Preparation	Gastrocnemius	Isotonic concentric
		Kicking	*Tibialis anterior	*Isotonic concentric

Notes

Hip, knee and ankle action in vertical jump

Movement	Joint	Phase	Prime mover	Contraction type
Vertical jump	Hip	Take off	Gluteals	Isotonic concentric
		Landing	Gluteals	Isotonic eccentric
	Knee	Take off	Quadriceps	Isotonic concentric
		Landing	Quadriceps	Isotonic eccentric
	Ankle	Take off	Gastrocnemius	Isotonic concentric
		Landing	Gastrocnemius	Isotonic eccentric

Notes

8. This image shows the performance of a deadlift.
Identify the movement pattern occuring at the knee in position A.

A

B

Marks: [1]

9. Identify *both* the **agonist** and the **antagonist** at the knee when the performer moves from position A to position B.

Marks: [2]

10. Identify the type of muscle contraction occuring in the **agonist** of the knee when moving from position A to position B.
Justify your answer.

Marks: [2]

Notes

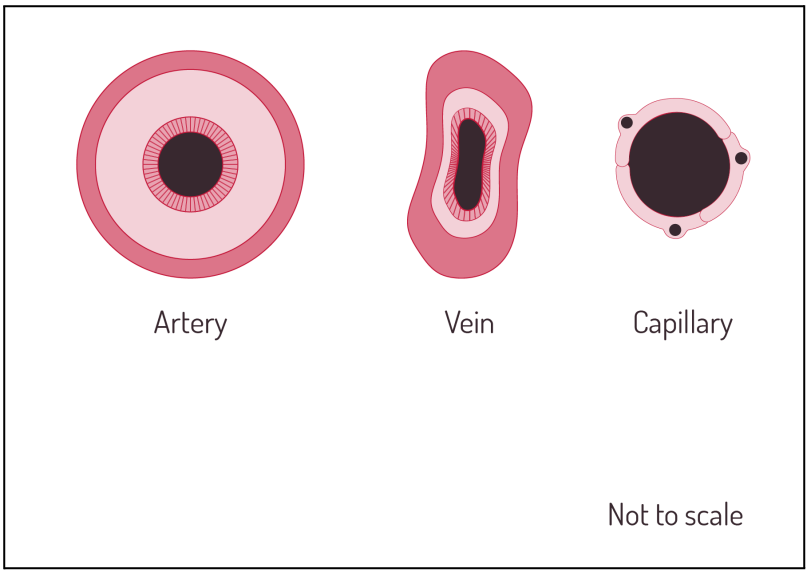
Shoulder action in cricket bowling

Movement	Joint	Pattern	Prime mover	Contraction type
Bowling	Shoulder	Circumduction	Deltoid	Isotonic concentric

Flexion - Extension - Abduction - Adduction - Circumduction

Notes

Section 4: Blood vessels



Notes

Section 5: Aerobic and anaerobic exercise

System	Energy release
Aerobic respiration	Glucose + Oxygen → Carbon dioxide + Water + Energy
Anaerobic respiration	Glucose → Lactic acid + Energy

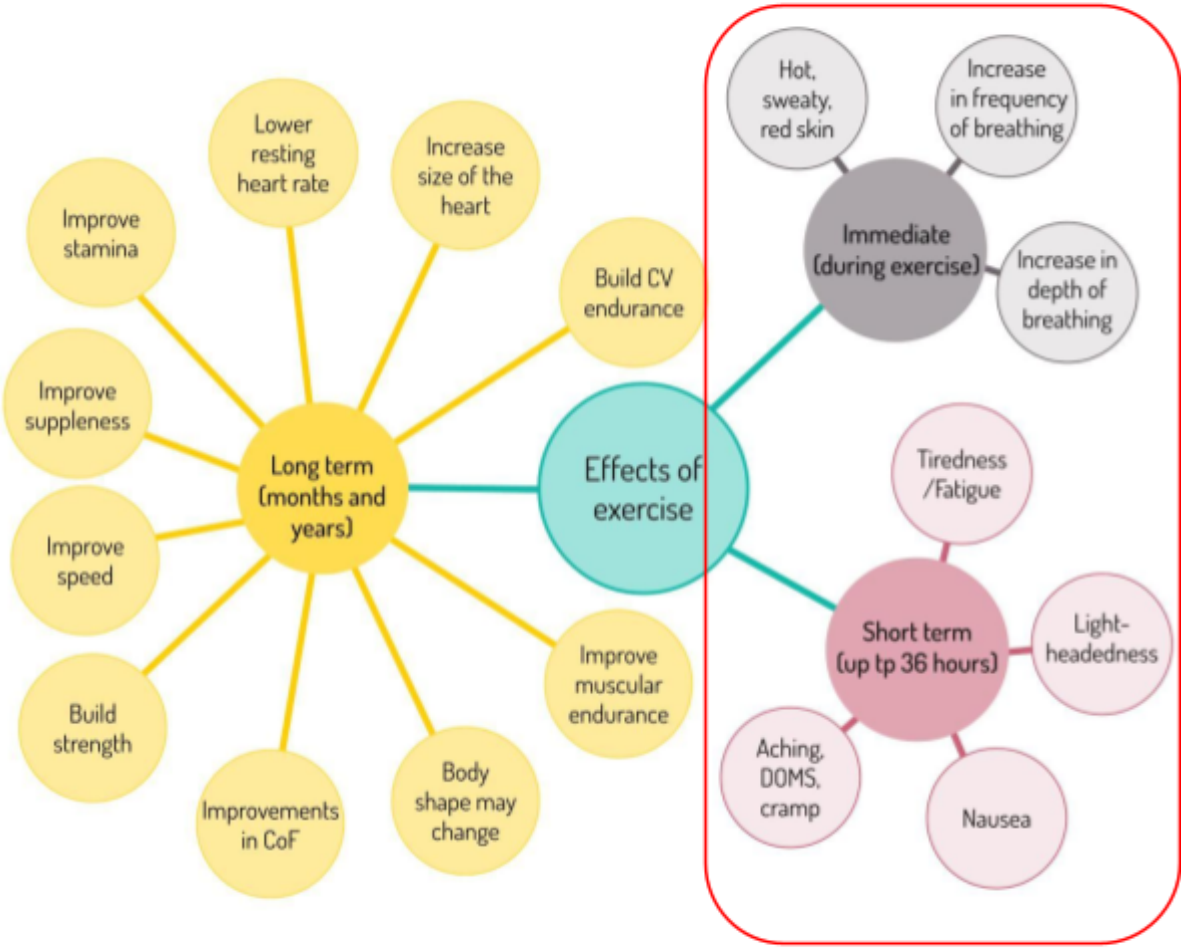
Notes

Section 6: Recovery from vigorous exercise

Methods of Recovery from **Vigorous** Exercise			
Cool down	Manipulation of diet	Ice baths	Massage
Maintains elevated breathing rate	Rehydration	Prevention of DOMS	Prevention of DOMS
Maintains elevated heart rate	Carbohydrates for energy	Capillary flushing	Removal of toxins
Stretching	Protein	Prevention of blood pooling	
Removal of lactic acid			

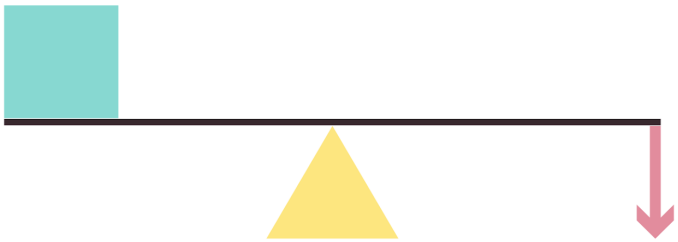
Notes

Section 7: Short-term effects of exercise



Notes

Section 8: Levers



Four components (AQA reference only three):

1. Fulcrum
2. Load (resistance)
3. Effort
4. Lever arm/bar

Notes

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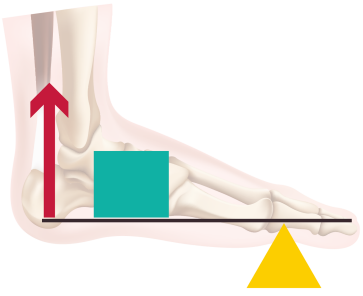

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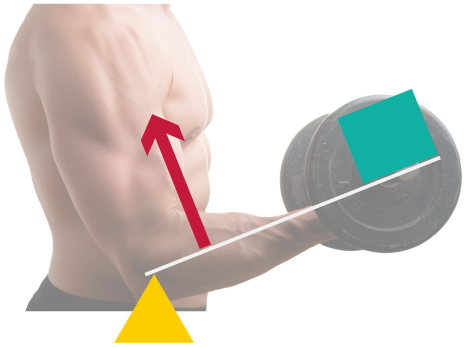

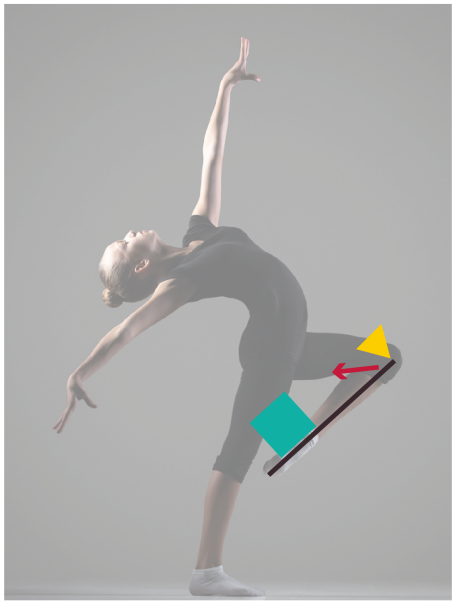

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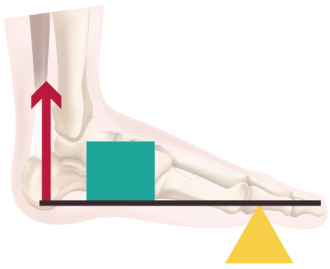
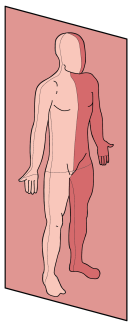
Mechanical advantage

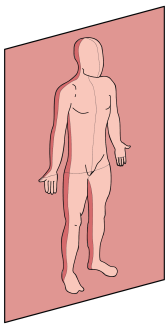


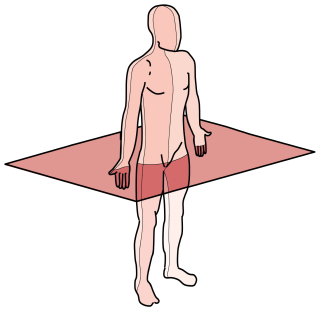
$$\text{Mechanical advantage} = \frac{\text{Effort arm}}{\text{Load arm}}$$

Notes

Section 9: Planes and axes







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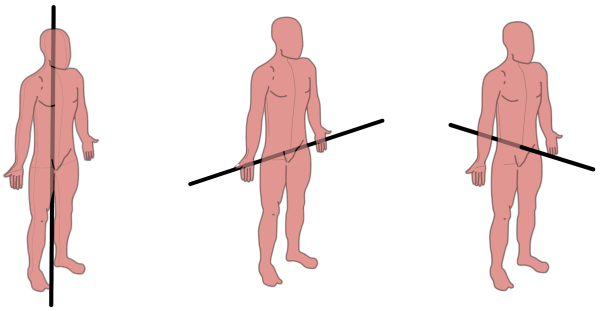

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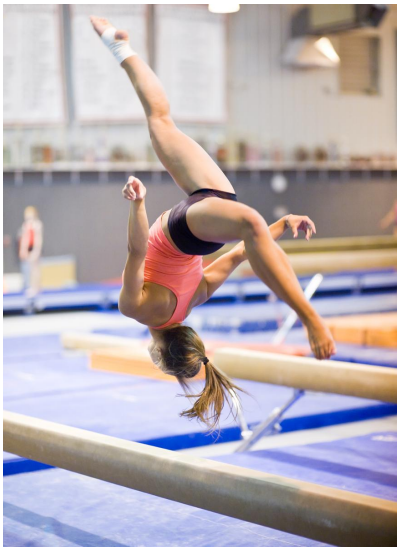

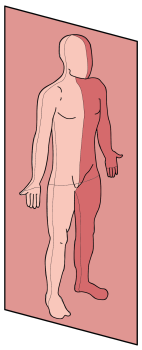

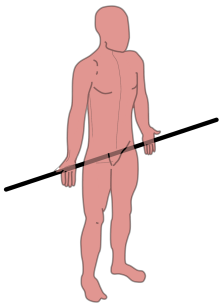

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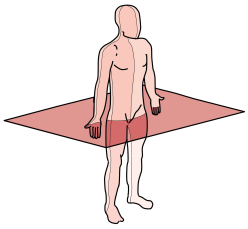

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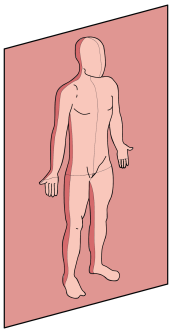
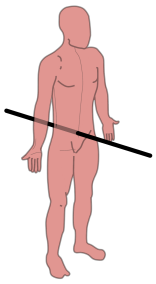




Notes

Section 10: Components of fitness

National Mock Exam

6. Define balance. Give a sporting example.

Marks: [2]

7. Justify the importance of balance to a handball player.

Marks: [4]

From definitions to examples

You must be prepared to provide specific examples of the importance of components of fitness to different activities. Complete this table with the EIO model of examples James describes in the session.

Component	Definition (A01)	Performer 1 (A02)	Performer 2 (A02)	Your level of confidence with this component
		Laura/Josh/Julie/ Tom/Kate	Laura/Josh/Julie/ Tom/Kate	
Agility	Changing direction quickly whilst maintaining control	(Julie) Ability to dodge an opponent in netball to get free and receive a pass.		😊 😐 ☹
Balance	Maintenance of the centre of mass over the base of support/			😊 😐 ☹
Cardiovascular endurance/ Aerobic power	Ability of the heart and lungs to supply oxygen to the working muscles			😊 😐 ☹
Coordination	The ability to use different parts of the body together smoothly and efficiently		(Laura) Ability to perform a split leap with a wide RoM at the hip.	😊 😐 ☹
Flexibility	Range of movement possible at a joint			😊 😐 ☹
Muscular endurance/ Dynamic strength	Ability of a muscle to undergo repeated contractions avoiding fatigue			😊 😐 ☹

Power/Explosive strength/ Anaerobic power	Product of strength and speed			
Reaction time	Time taken to initiate response to a stimulus			
Static strength	Ability to hold a body part in a static position or Maximum force that can be applied to an immovable object			
Speed	Maximum rate at which an individual is able to perform a movement or cover a distance in a period of time			

From examples to impact

Try completing answers to this question over and over again:

Justify the importance of (insert component of fitness here) ..... to a (insert performer/activity here) .....

For example:

- "Justify the importance of **speed** to a **marathon runner**."
- "Justify the importance of **flexibility** to a **hockey goalkeeper**."

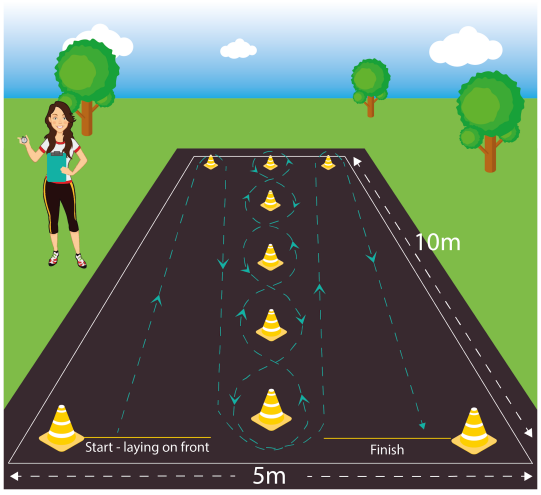
You can use the performer profiles provided to get you started or use your own examples.

	CoF		Performer/Activity	Answer (A03)
Justify the importance of	maximal strength	to	sprinting (Josh).	"Maximal strength causes large amounts of force to be applied to the block to cause an explosive start. It also allows the sprinter to apply more force to the ground when striding, which propels the sprinter forward faster. Finally, maximal strength in the arms and shoulders allows the sprinter to pump their arms causing greater forward motion."
Justify the importance of		to		
Justify the importance of		to		
Justify the importance of		to		
Justify the importance of		to		

Notice that in "Justify" questions there are typically no marks for definitions (A01) or even examples (A02). Marks are awarded for stating the impact of the performance.

Section 11: Fitness testing

Illinois Agility Test



Illinois Agility Test	
Protocol	Strengths and Weaknesses
Mark the course out to the exact measurements required (10m x 5m grid).	Relevant for running-based games
Start lying face down (prone) behind the start line.	Small area
Follow the path correctly.	Maximal
Stop the clock when you cross the finish line.	Coordination issues affect results
Result is time in seconds.	Little sideways movement so less relevant for racquet sports
	One participant at a time

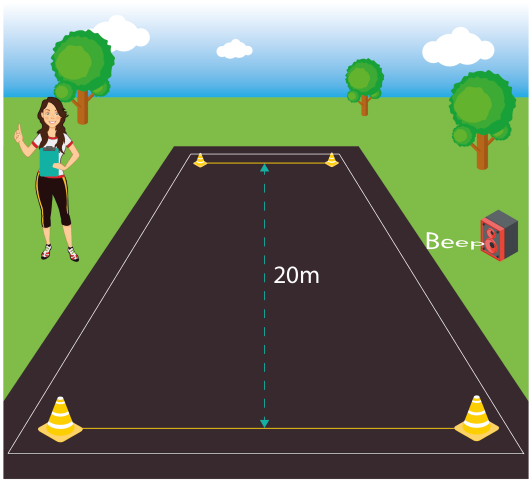
Notes

Standing Stork Test

Stork Stand Test	
Protocol	Strengths and Weaknesses
Hands on hips and one foot on the inside knee of the opposite leg	Little equipment required
Participant raises their heel	Small area
Hold the balance for as long as possible	Participants struggle to find the balance
Heel touches the ground and the balance is lost	Potential timing errors
Score is the total time the the participant held the balance successfully	Non-dynamic: only relates to static balances
	One participant at a time

Notes

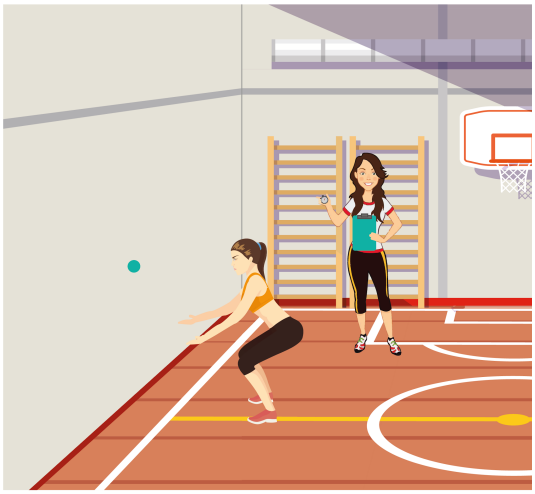
Multi-stage Fitness Test



Multi-stage Fitness Test	
Protocol	Strengths and Weaknesses
Measure out a 20m track	Lots of participants simultaneously
Use a multi-stage fitness recording	Relatively small amount of space required
Keep in time to the bleeps	Maximal
Wait for the bleep before turning	Not relevant for non-running based sports like cycling
Bleeps get closer together	Prediction only - it is not a measure of CV endurance
Test ends after two missed beeps	Not reliable - scores vary a lot in repeated attempts (based on motivation)
Result is the last level and shuttle they reach	

Notes

Wall Throw Test



Wall Toss Test	
Protocol	Strengths and Weaknesses
Mark a line 2m from the wall	Simple and little equipment required
Stand behind the line	Throwing and catching is a learned skill
Using an underarm action, throw the ball at the wall	Not sport-specific
Throw the ball with one hand and catch with the other	
Count the number of successful catches	
In 30 seconds	

Notes

Sit and Reach Test

Sit and Reach Test	
Protocol	Strengths and Weaknesses
Remove shoes	Simple to complete
Sit on the floor with legs straight out	Little equipment required
Soles of the feet on the box	Good measure of lower back and hamstring flexibility
Bench and ruler as an alternative	Only measures lower body flexibility
Reach forward with one hand on top of the other	Only measures static flexibility
Stretch as far as possible and hold for two seconds	One participant at a time
No jerking or bouncing movements	
Distance reached is measured in centimetres	

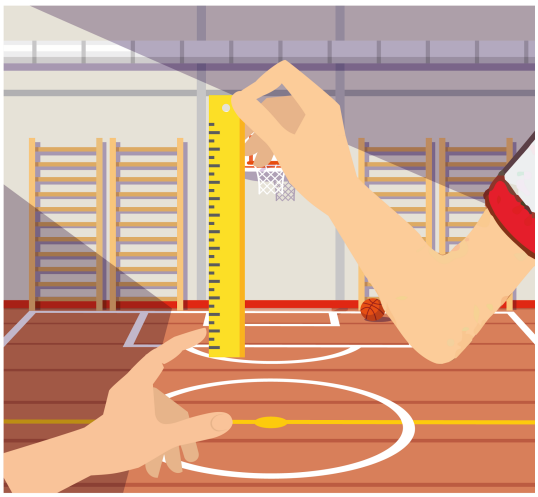
Notes

Abdominal Curl Test

Sit Up Bleep Test	
Protocol	Strengths and Weaknesses
Use a sit up bleep test recording	Large numbers of participants simultaneously
Keep in time to the bleeps	Little equipment required
Complete the entire range of movement	Maximal
Two bleeps per sit up	Specific to core and hip flexor muscular endurance
Test ends after two missed bleeps	Participants experience technique issues so reliability is low

Notes

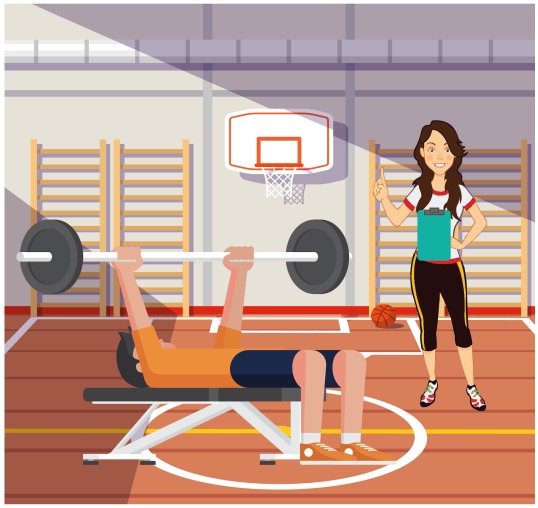
Ruler Drop Test



Ruler Drop Test	
Protocol	Strengths and Weaknesses
Ruler is held at 0cm between the thumb and index finger	Simple
Ruler is dropped with no warning	Generic test - not specific to reactions in any sporting context
Participant catches the ruler as early as possible	Results improve with practice - not reliable
Distance dropped is measured in centimetres	

Notes

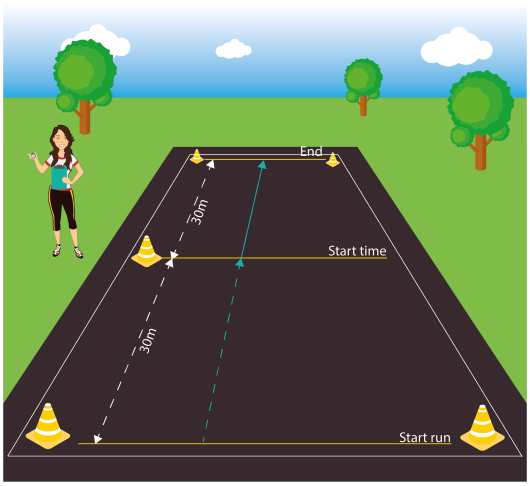
1 Rep Max Test



One Rep Max Test	
Protocol	Strengths and Weaknesses
Select the body part	Muscle-group specific
Realistic weight lifted once	Can be repeated for every lift
PRest for 5 minutes	Maximal
Select a heavier weight	Time-consuming
Repeat the process until a weight is selected that cannot be lifted once	Lifts are technique-based as well as strength-related
Result is weight in kg of the last successful lift	

Notes

30m Sprint Test



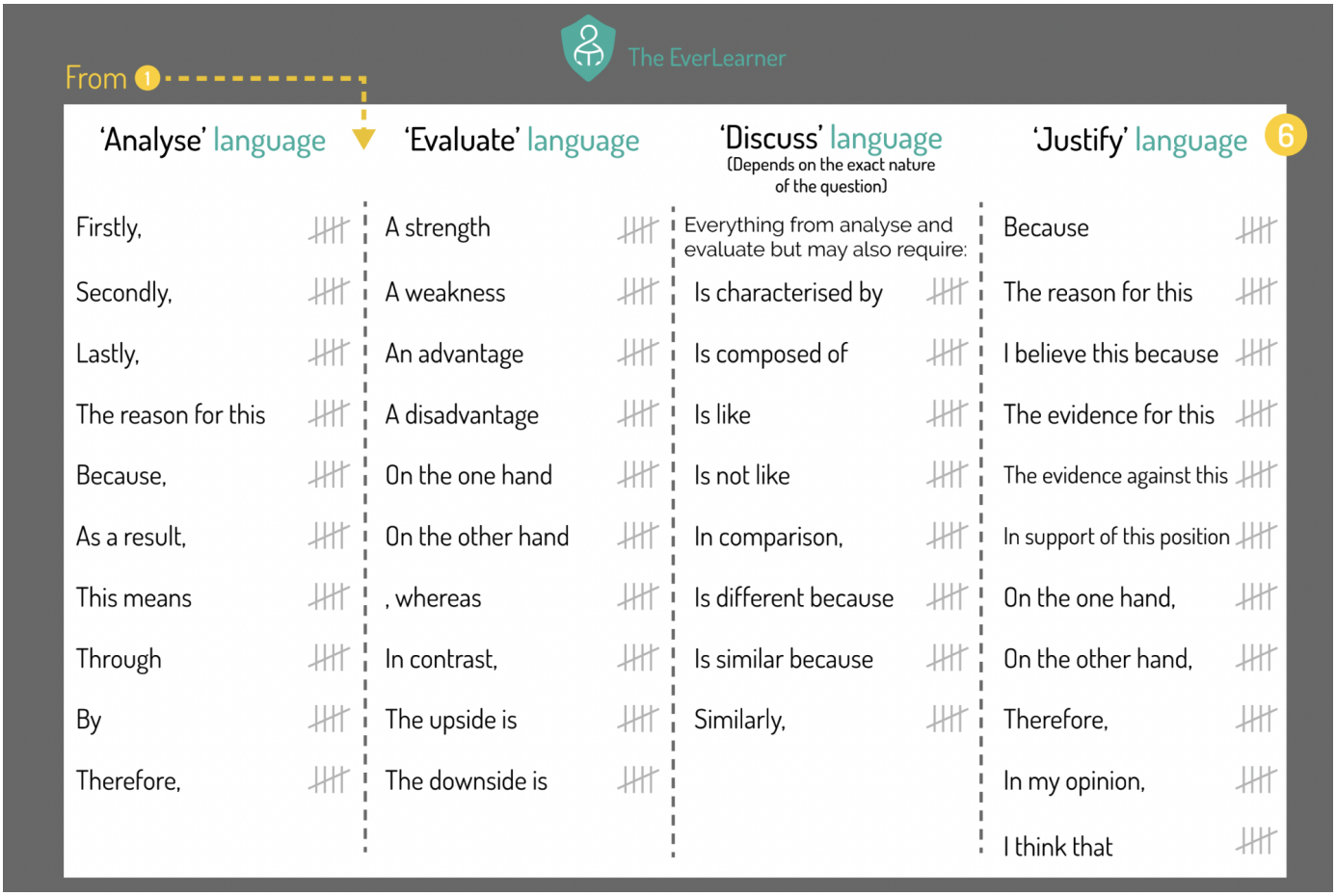
30m Sprint Test	
Protocol	Strengths and Weaknesses
Measure out exactly 30m	Simple to set up
Rolling start	Measures top speed rather than acceleration
Run as fast as you can	Maximal
Use a stopwatch to measure the time	Only measures straight line running speed
Result is time in seconds	Not sport-specific
	Potential timing inaccuracies

Notes

Section 12: Extended writing (6- and 9-markers)

AQA	Paper 1				Paper 2			
	/6 skill	/ 6	/9 skill	/ 9	/6 skill	/ 6	/9 skill	/ 9
SAMS 1	Evaluate	Agility and reaction time (100m sprinter)	Evaluate	Plyometric and Fartlek (named sport)	Analyse	Information processing (racket sport)	Analyse	Factors affecting participation (Aisha)
SAMS 2	Evaluate	Ice bath for recovery (badminton)	Evaluate	Interval and weight training (team sport)	Evaluate	Somatotypes (John basketball)	Evaluate	Technology (spectators and performers)
2018	Evaluate	Altitude training (marathon runner)	Analyse	Training seasons (1500m runner)	Evaluate	Strategies to prevent spectator violence (football hooliganism)	Evaluate	Media and sponsorship (performers)
2019	Evaluate	Speed and muscular endurance (elite long jump)	Evaluate	Continuous training (Gary basketball and cycling)	Evaluate	Technology (officials and sport)	Justify	Factors leading to obesity and inactivity (Jane)
2020	Evaluate	Plyometric and interval training (games player)	Analyse	Injury prevention and recovery methods (football/netball)	Evaluate	PEDS (sprinter)	Analyse	Participation levels (age)
2021	Evaluate	Illinois agility for a netball player and 200m runner.	Discuss	Weight training for 800m, javelin and long jump.	Analyse	Somatotypes for different activities	Discuss	Reasons for sedentary lifestyle
2022	Justify	Muscle endurance and speed (footballer)	Analyse	Aerobic and anaerobic for interval training (games player)	Analyse	Information processing (catching a ball)	Discuss	Engagement factors

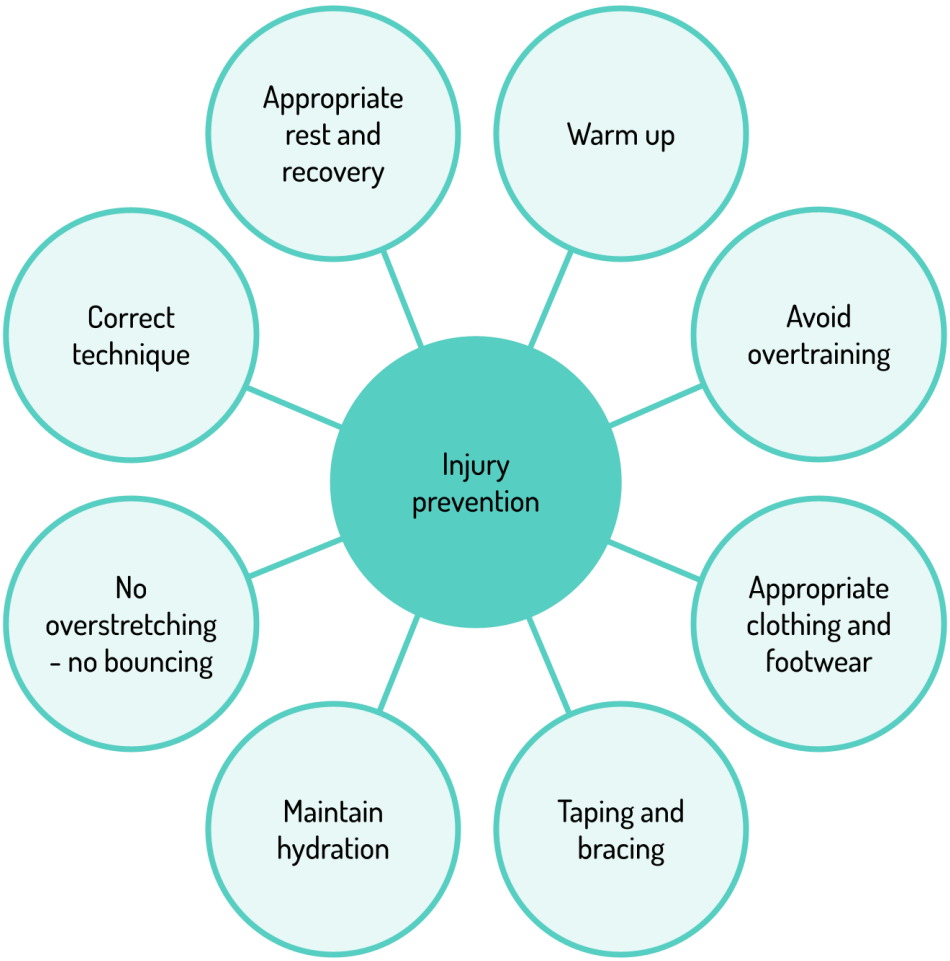
It is critical that you can perform the different skills of "Evaluate", "Analyse", "Justify" and "Discuss".



We urge all students and teachers to use The EverLearner's 6 and 9-mark guidance documents when revising for the AQA GCSE PE Paper 1 and 2 exams 2023. Find the document here.

Notes

Section 13: Injury prevention

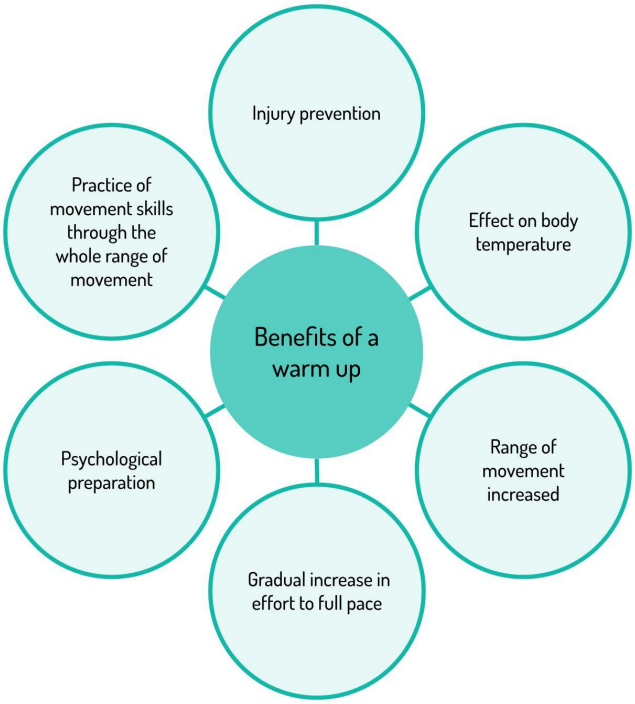


Notes

Section 14: Warming up and cooling down

Warm Up

- Pulse Raiser
- Stretch/ mobility
- Skill Familiarisation
- Mental Preparation



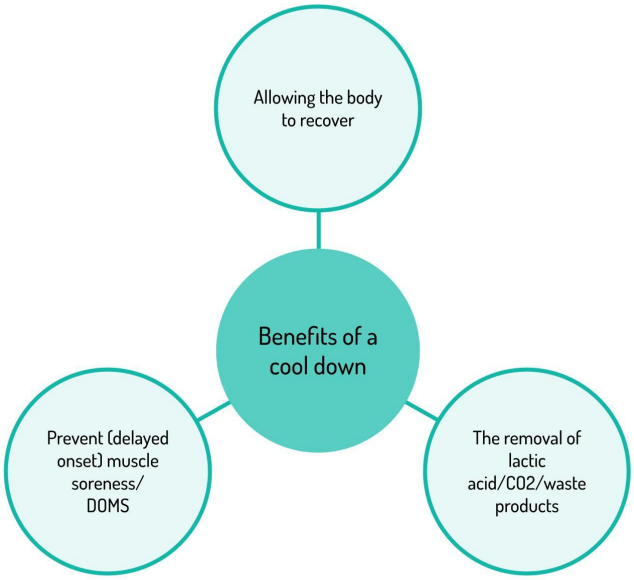
Notes

Cool down

Maintain respiratory/ cardiac rates

Gradually decrease respiratory/cardiac rates

Stretching



Notes