Paper 1

Revision Booklet

Name: _____

OCR
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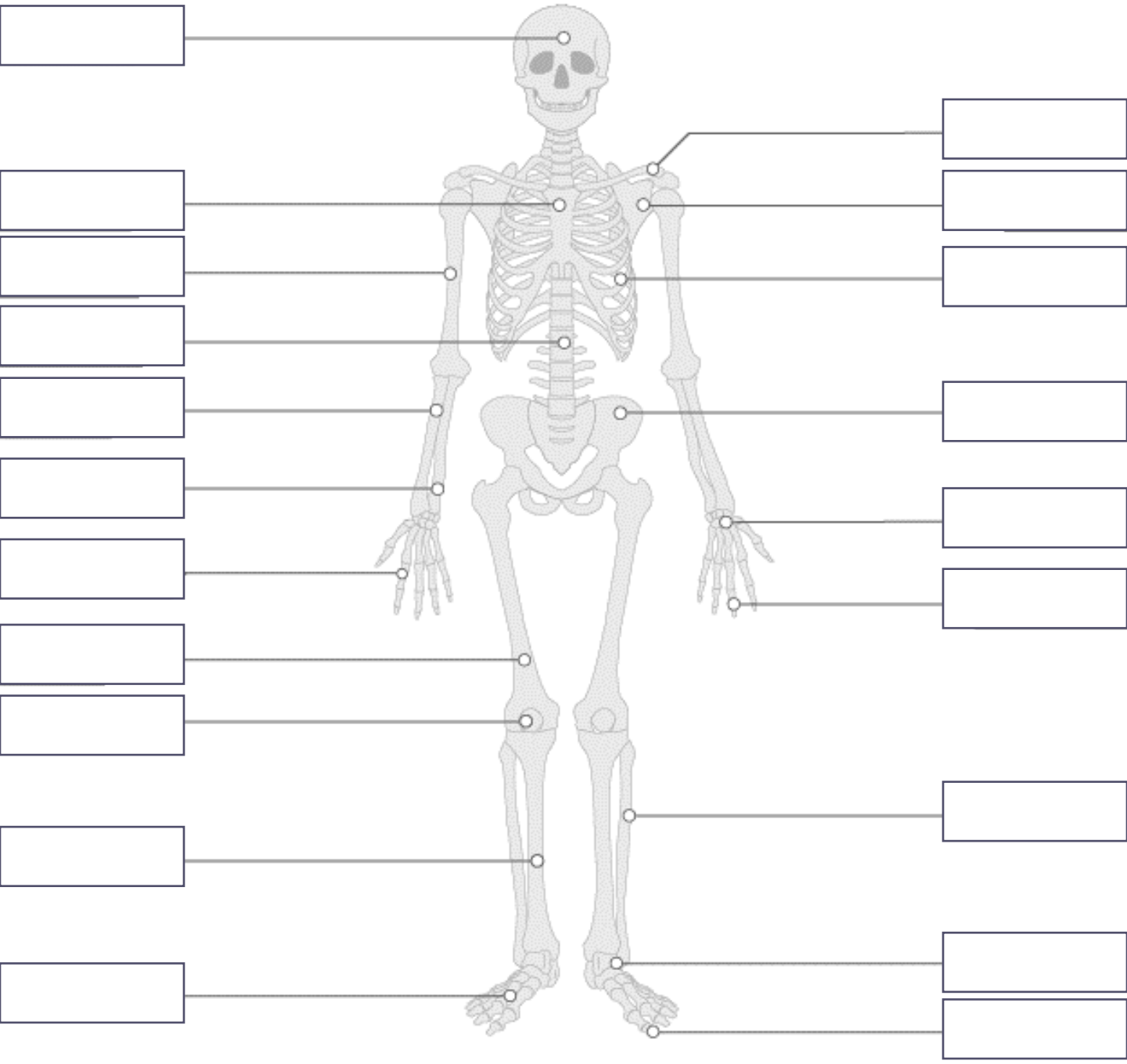
GCSE Skeletal System: What do I need to know?

Know the location of the major bones in the body, know the 6 main functions of the skeleton.



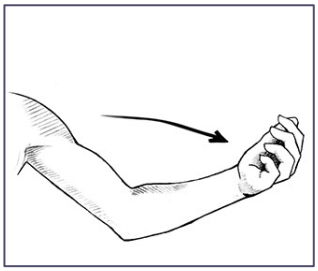
Function	Description

GCSE Skeletal System: What do I need to know?

Know the structure of a synovial joint, know the 6 types of movement, know the two types of joint and the movements available, know the articulating bones of the knee, hip, shoulder and elbow.

A synovial joint is…

Element	**Function**
Ligaments	
Tendons	
Cartilage	



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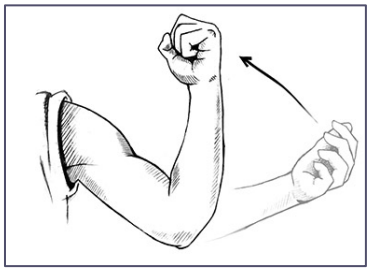

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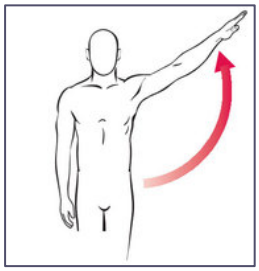

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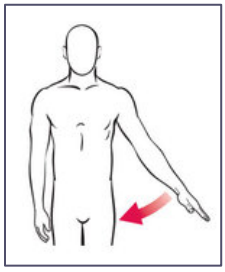

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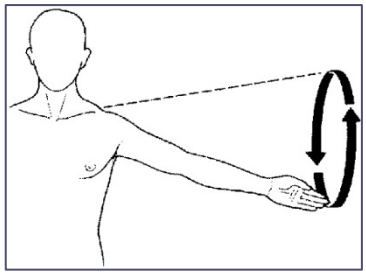

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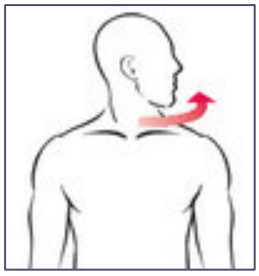

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Joint	**Type**	**Articulating Bones**	**Movements**
Knee			
Hip			
Elbow			
Shoulder			

1. Which of the following is **not** a bone in the arm?
    a. Humerus □
    b. Radius □
    c. Tibia □
    d. Ulna □

2. In which bone might red blood cells be produced?
    a. Femur □
    b. Phalanges □
    c. Ribs □
    d. Ulna □

3. Which of the following best describes how the skeleton provides protection?
    a. Stops you getting injured □
    b. Protects vital organs such as the cranium protecting the brain □
    c. Helps to hold the body upright to stop you falling over □
    d. The tibia acts as a guard in the shin for the leg □

4. Which of the following is not a function of the skeleton?
    a. Movement □
    b. Structure □
    c. Posture □
    d. Support □

5. Which mineral is stored in the bones and helps to improve bone density?
    a. Calcium □
    b. Phosphorus □
    c. Iron □
    d. Magnesium □

6. Identify the three long bones in the leg (1 mark).

……

7. Explain how the skeleton gives the body support (1 mark).

……

8. Identify the bones that protect the heart and lungs (1 mark).

……

9. Identify which 3 bones are located in the hands (1 mark).

……

10. Identify the bone that provides shape to the knee (1 mark).

……

1. Which one of the following is an example of adduction?
    a. Which Moving your leg out to the side to gain balance in a gymnastic routine ▫
    b. Bending your arms when performing a biceps curl in weight training ▫
    c. Throwing your head back when breathing in backstroke ▫
    d. Moving both arms towards your body during the breast stroke ▫

2. Which one of the following is an example of a ball and socket joint?
    a. Ankle joint ▫
    b. Elbow joint ▫
    c. Shoulder joint ▫
    d. Neck joint ▫

3. Which one of the following is the best description of the movement allowed by a hinge joint?
    a. Allows a wide range of movement ▫
    b. Only allows rotation ▫
    c. Allows for abduction and adduction ▫
    d. Only allows flexion and extension ▫

4. Which of the following is an example of a hinge joint?
    a. The elbow joint ▫
    b. The shoulder joint ▫
    c. The spinal column ▫
    d. The hip joint ▫

5. Which of the following is an example of rotation?
    a. The shoulder whilst bowling a ball in cricket ▫
    b. The shoulder whilst performing tennis serve ▫
    c. The hip whilst opening the foot out to pass a football ▫
    d. The elbow whilst performing a bicep curl ▫

6. Describe what is meant by abduction. (1 mark)

……

7. Identify which type of joint is the hip. (1 mark)

……

8. Identify which movement types the shoulder allow. (1 mark)

……

9. Define the term joint. (1 mark)

……

10. Give an example of a when extension is used in a sport. (1 mark).

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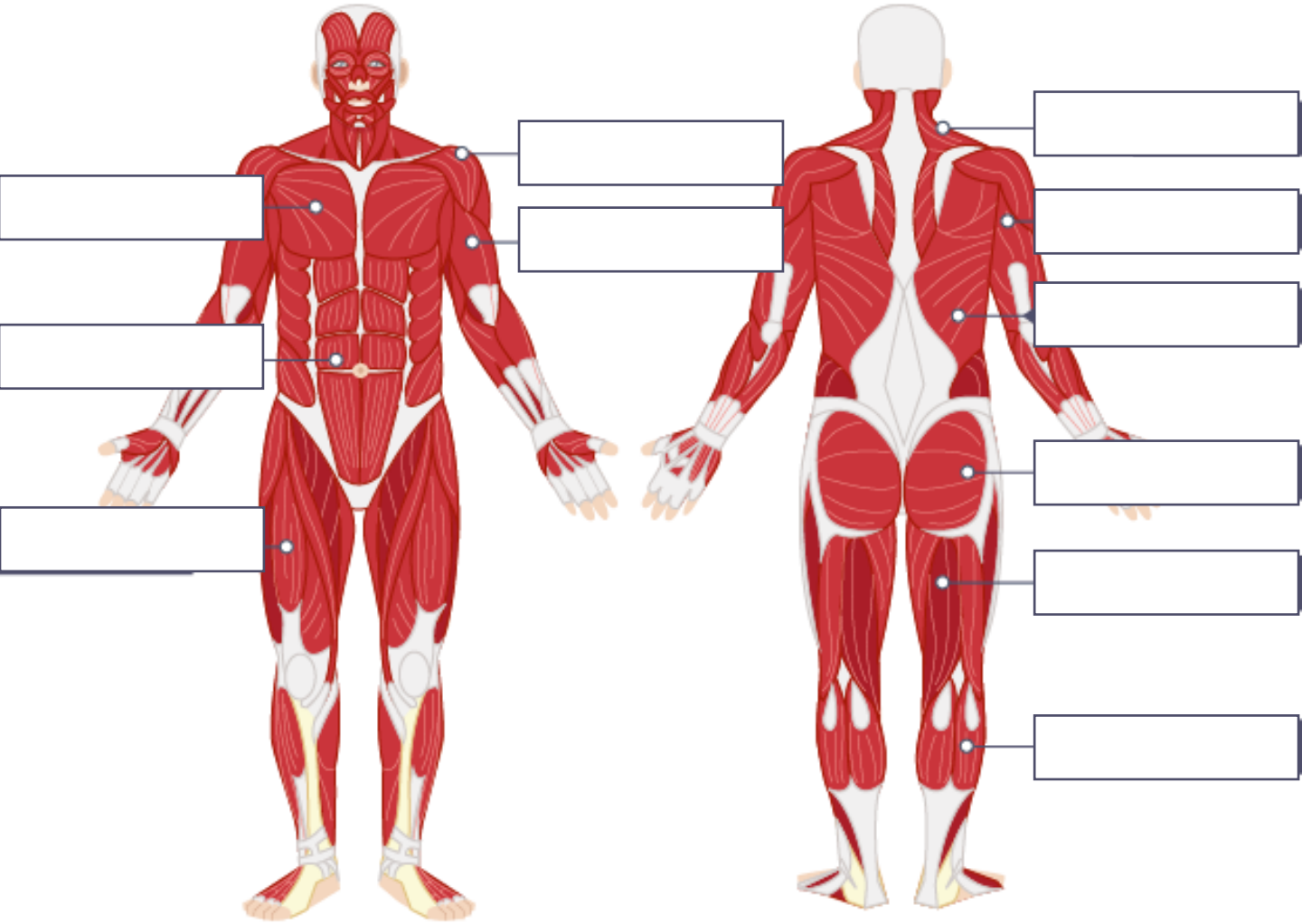
GCSE Muscular System: What do I need to know?

Know the location of the major muscles in the body, know the role of the agonist, antagonist and fixator, know the three main antagonistic pairs



Type	Description
Agonist	
Antagonist	
Fixator	

Joint	Muscle Pair	Movements
Shoulder		
Elbow		
Knee		

GCSE Muscular System: What do I need to know?

Know the movement caused when each muscle is the agonist and give sporting examples.

Muscle	Movement?	At which joint?	Sporting example
Bicep			
Tricep			
Quadricep			
Hamstring			
Deltoid			
Latissimus Dorsi			
Gluteals			
Gastrocnemius			
Abdominals			

1. Which muscle causes flexion at the elbow?
    a. Bicep □
    b. Tricep □
    c. Quadricep □
    d. Hamstring □

2. Which muscle causes extension at the elbow?
    a. Bicep □
    b. Tricep □
    c. Quadricep □
    d. Hamstring □

3. Which muscle causes flexion at the knee?
    a. Bicep □
    b. Tricep □
    c. Quadricep □
    d. Hamstring □

4. Which muscle causes extension at the knee?
    a. Bicep □
    b. Tricep □
    c. Quadricep □
    d. Hamstring □

5. Which muscle causes adduction at the hip?
    a. Latissimus Dorsi □
    b. Deltoid □
    c. Quadricep □
    d. Hamstring □

6. Which muscles causes abduction at the hip?

……

7. Which muscle is the agonist at the knee during the extension stage of kicking a football

……

8. Which muscle is the agonist at the shoulder during a ‘lat raise’.

……

9. Which muscle is the antagonist at the elbow during a bicep curl

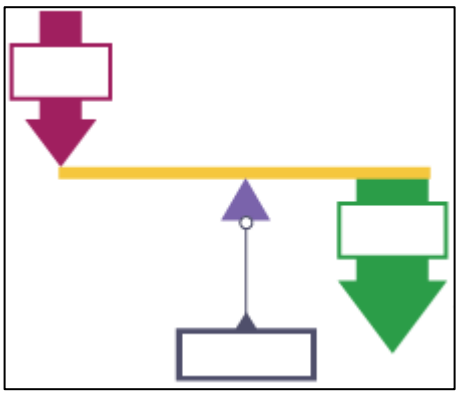
……

10. Which muscle is the antagonist at the knee during the upward phase of the squat

……

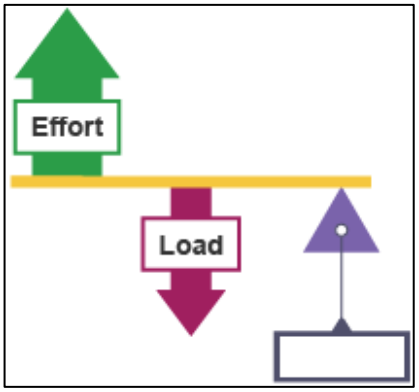
GCSE Levers: What do I need to know?

Know the three classes of lever and their use in sport. Know the definition of mechanical advantage.



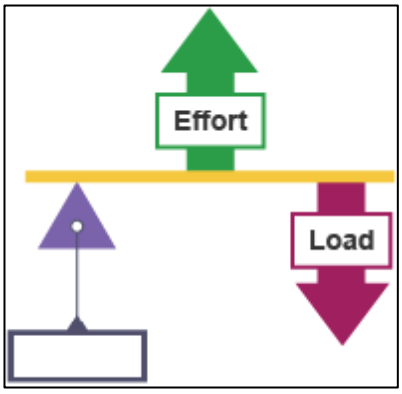
Type of Lever _____

Where is it found in the body?
Sporting example:



Type of Lever _____

Where is it found in the body?
Sporting example:



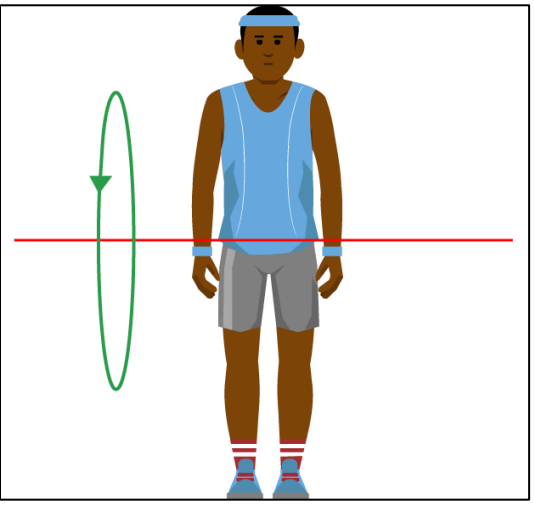
Type of Lever _____

Where is it found in the body?
Sporting example:

Second class levers have a mechanical _____ because the _____ is closer to the fulcrum than the _____. This means that _____.
Third class levers have a mechanical _____ because the _____ is closer to the fulcrum than the _____. This means that _____.

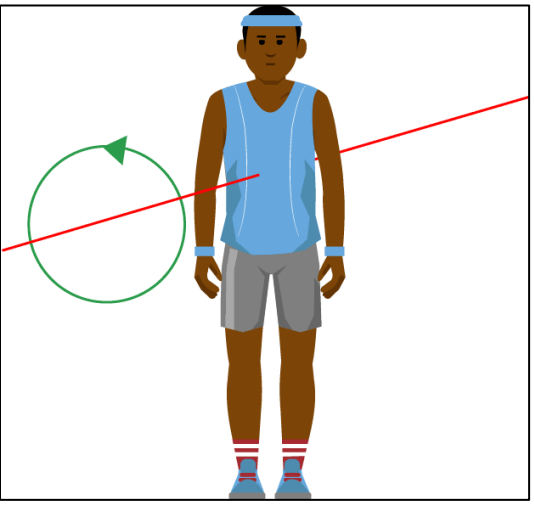
GCSE Planes & Axis: What do I need to know?

Know the location of the planes of movement and application to examples. Know the location of the axis of rotation and application to examples.



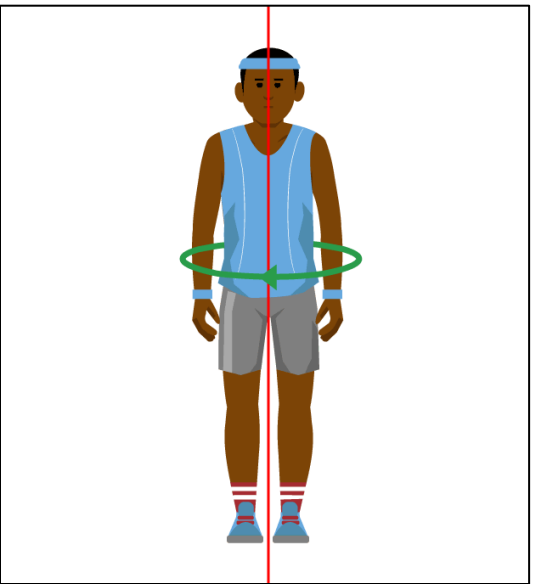
Name of Axis _____

Description:
Movement example:



Name of Axis _____

Description:
Movement example:



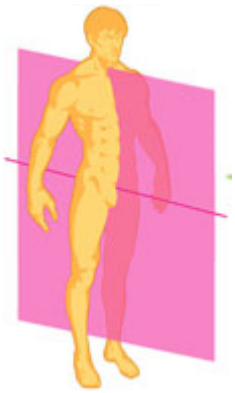
Name of Axis _____

Description:
Movement example:

GCSE Planes & Axis: What do I need to know?

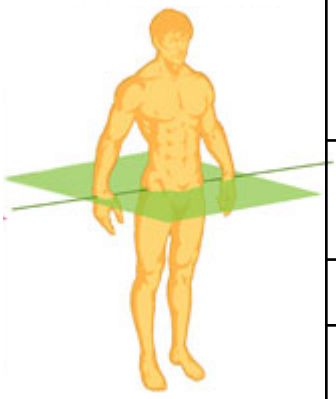
Know the location of the planes of movement and application to examples. Know the location of the axis of rotation and application to examples.

Name of Plane _____



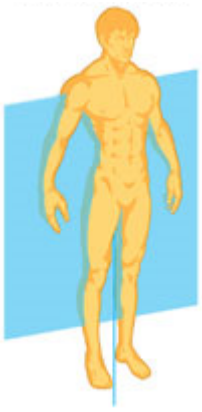
Description:
Linked Movements:
Linked Axis:
Example:

Name of Plane _____



Description:
Linked Movements:
Linked Axis:
Example:

Name of Plane _____



Description:
Linked Movements:
Linked Axis:
Example:

1. Around which axis does a cartwheel take place?
    a. Longitudinal □
    b. Frontal □
    c. Sagittal □
    d. Transverse □

2. Around which axis does a pirouette take place?
    a. Longitudinal □
    b. Frontal □
    c. Sagittal □
    d. Transverse □

3. The action of running takes place through which plane?
    a. Longitudinal □
    b. Frontal □
    c. Sagittal □
    d. Transverse □

4. The action of a press up takes place through which plane?
    a. Longitudinal □
    b. Frontal □
    c. Sagittal □
    d. Transverse □

5. In a first class lever, which element is in the middle?
    a. Lever □
    b. Plane □
    c. Axis □
    d. Lever Arm □

6. Which class of lever allows for movement at the neck?

……

7. Which class of lever allows the knee to extend?

……

8. Through which place and axis does a forward roll occur?

……

9. Draw a second class lever

……

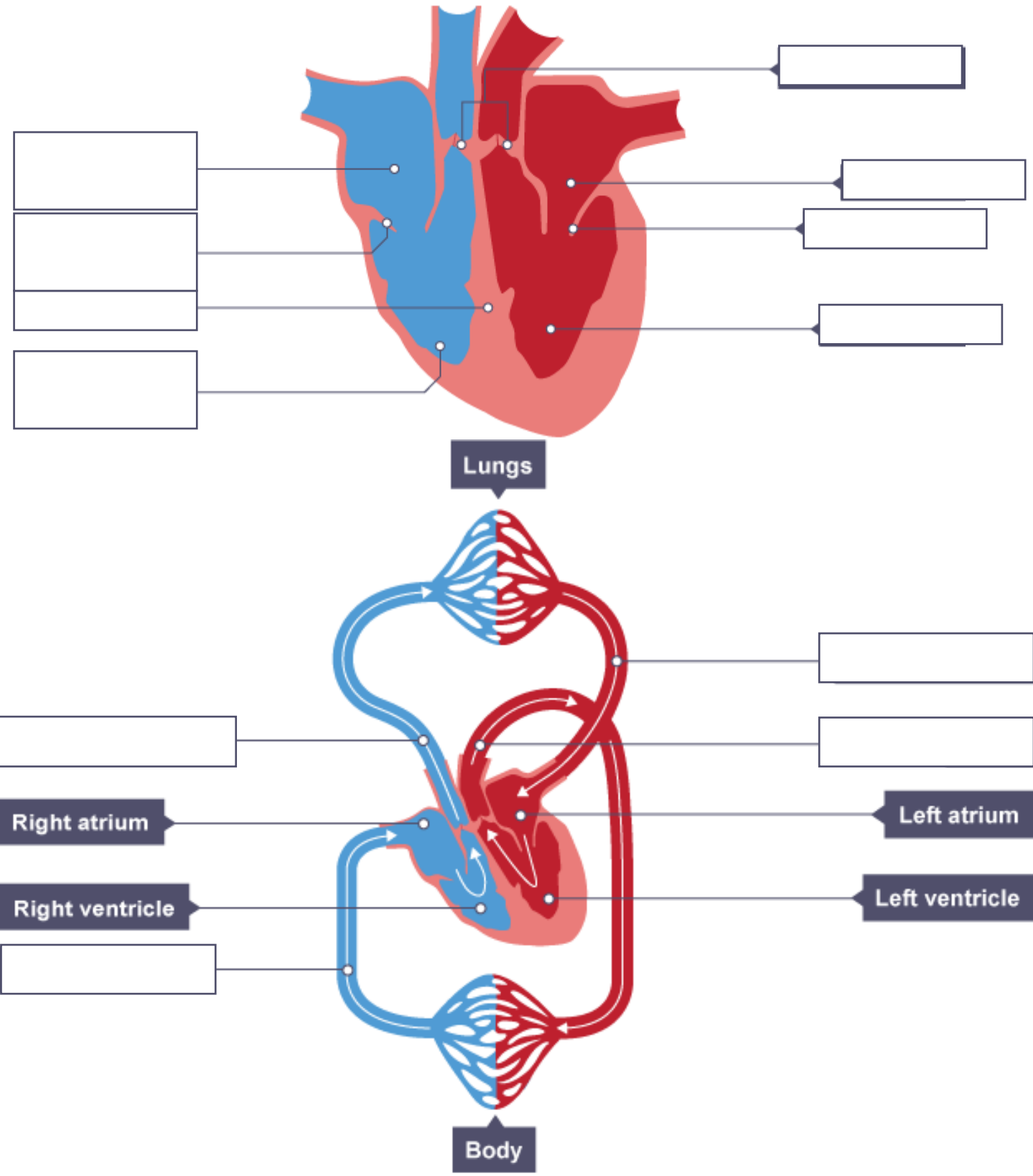
10. Draw a third class lever

……

GCSE Cardiovascular System: What do I need to know?

Know the double circulatory system, know the different types of blood vessel, understand the pathway of blood through the heart, know the equation for cardiac output, know the role of red blood cells.

Pulmonary System	Pumps blood from…
Systemic System	Pumps blood from…



GCSE Cardiovascular System: What do I need to know?

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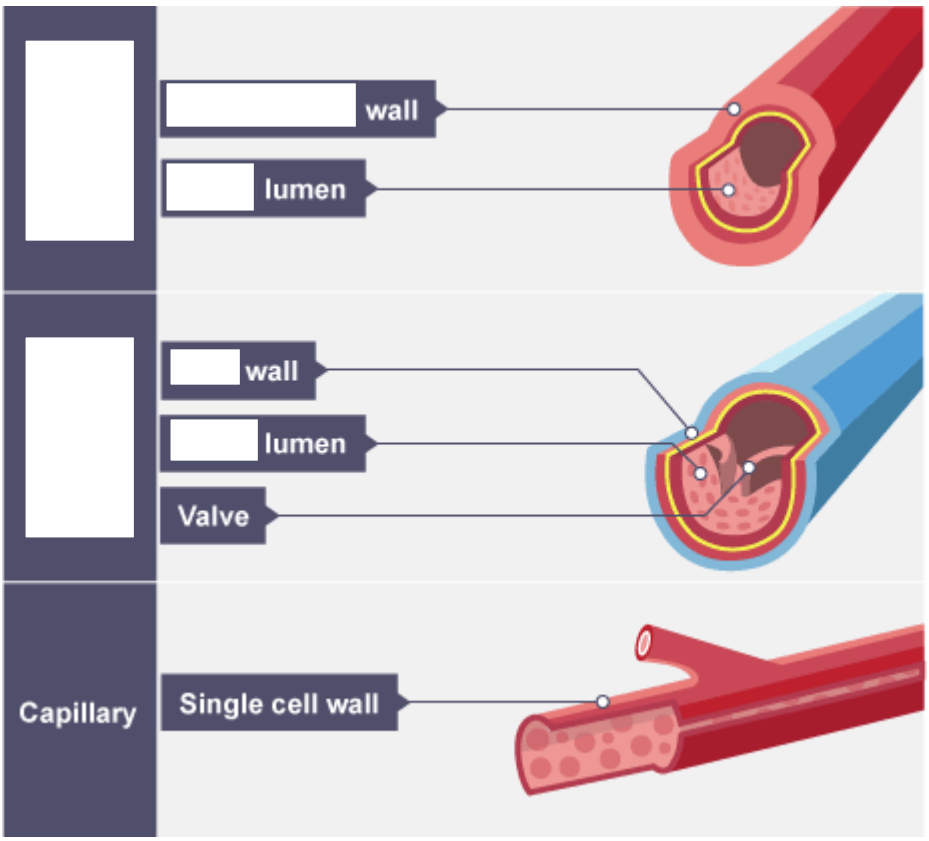


What is the role of a red blood cell?

	Artery	**Vein**
Function		
Wall		
Lumen		
Blood travels at high or low pressure?		

Cardiac Output equation (including units):

1. Which of the following have valves?
    a. Veins □
    b. Arteries □
    c. Capillaries □
    d. All Blood Vessels □

2. Which of the following have a large lumen in comparison to their size?
    a. Veins □
    b. Arteries □
    c. Capillaries □
    d. All Blood Vessels □

3. Which of the following have walls one cell thick?
    a. Veins □
    b. Arteries □
    c. Capillaries □
    d. All Blood Vessels □

4. Which of the following carries blood at high pressure?
    a. Veins □
    b. Arteries □
    c. Capillaries □
    d. All Blood Vessels □

5. Which of the following carries blood away from the heart?
    a. Veins □
    b. Arteries □
    c. Capillaries □
    d. All Blood Vessels □

6. Identify the names of the two systems in the double circulatory system

……

7. State the equation for cardiac output

……

8. Describe stroke volume

……

9. Describe how to calculate max heart rate

……

10. Explain why the fitter someone is, the lower their resting heart rate is

……

1. Which of the following is not a type of valve in the heart?
   a. Tricuspid □
   b. Bicuspid □
   c. Pulmonary □
   d. Atrium □

2. Which of the following is the blood vessel that takes blood to the body?
   a. Vena Cava □
   b. Aorta □
   c. Pulmonary Artery □
   d. Ventricle □

3. Which of the following is the blood vessel that takes blood to the lungs?
   a. Vena Cava □
   b. Aorta □
   c. Pulmonary Artery □
   d. Ventricle □

4. Which of the following is the blood vessel that brings blood back from the lungs?
   a. Atrium □
   b. Aorta □
   c. Pulmonary Artery □
   d. Pulmonary Vein □

5. Which of the following is the blood vessel that brings blood back from the body?
   a. Vena Cava □
   b. Atrium □
   c. Pulmonary Artery □
   d. Ventricle □

6. Name the four chambers of the heart

……

7. Name the two semi-lunar valves

……

8. Blood enters the heart from the vena cava to which chamber?

……

9. Blood enters the heart from the pulmonary vein to which chamber?

……

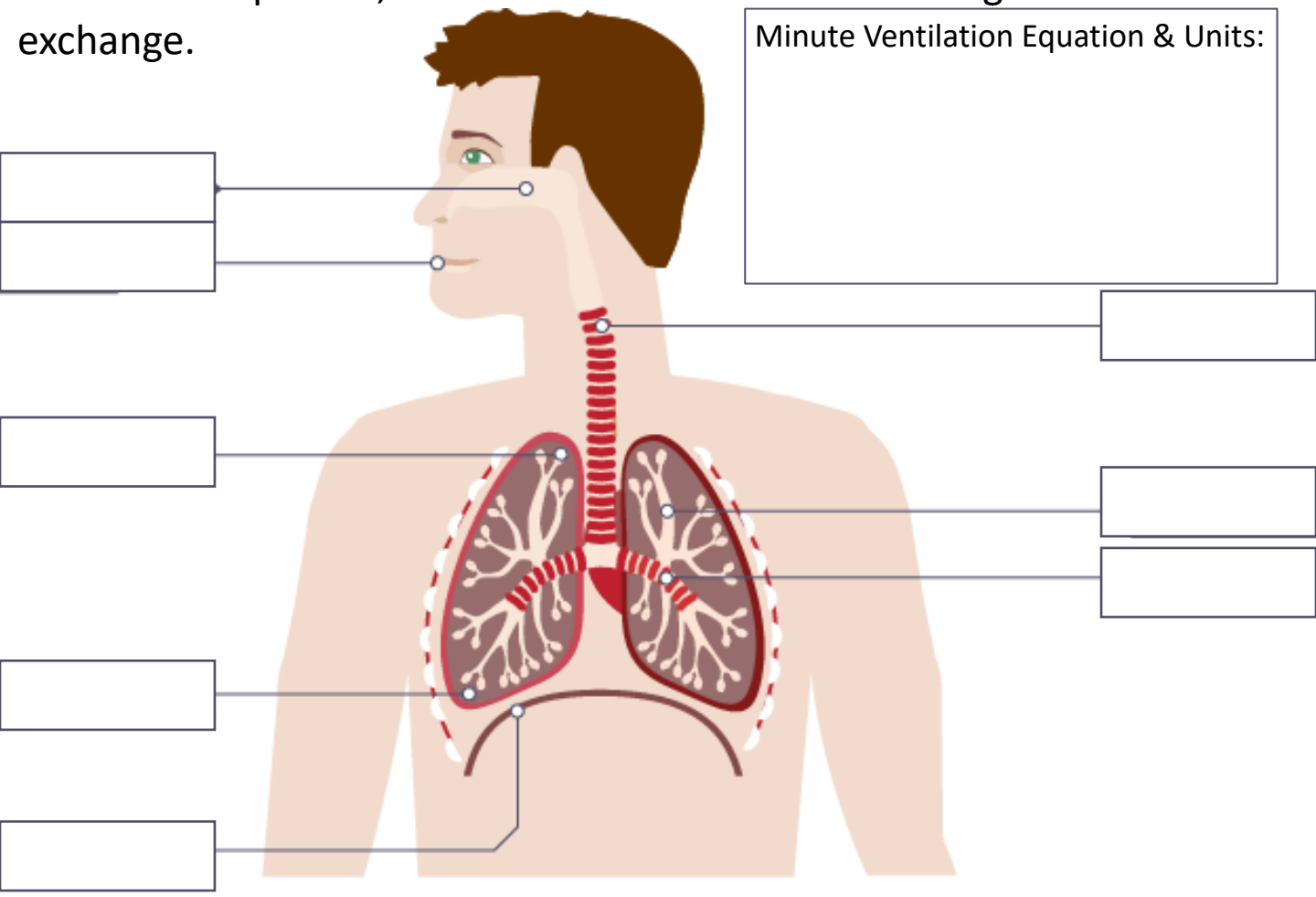
10. Blood leaves the heart to the aorta via which valve?

……

GCSE Respiratory System: What do I need to know?

Understand the pathway of air through the respiratory system, know the role of respiratory muscles in breathing, know the minute ventilation equation, know about alveoli as the site of gaseous exchange.

Minute Ventilation Equation & Units:



	Inspiration	Expiration
Muscles…		
Chest Cavity Size…		
Pressure…		
Air flows…		

During gaseous exchange, oxygen diffuses from…
During gaseous exchange, carbon dioxide diffuses from…

GCSE Aerobic & Anaerobic Exercise: What do I need to know?

Know the definitions of aerobic and anaerobic exercise, be able to apply practical examples.

	Aerobic	Anaerobic
Definition		
Duration of Exercise		
Intensity of Exercise		
Equation		
Sporting Examples		

1. Where does gaseous exchange take place?
   a. Bronchi □
   b. Trachea □
   c. Bronchioles □
   d. Alveoli □

2. Which gas diffuses from the blood to the alveoli
   a. Oxygen □
   b. Carbon Dioxide □
   c. Hydrogen □
   d. Nitrogen □

3. What happens during inspiration?
   a. Diaphragm contracts, air pressure increases □
   b. Diaphragm contracts, air pressure decreases □
   c. Diaphragm relaxes, air pressure increases □
   d. Diaphragm relaxes, air pressure decreases □

4. Which of the following best describes aerobic exercise?
   a. Exercise without the presence of oxygen □
   b. Moderate intensity exercise □
   c. Exercise in the presence of oxygen □
   d. High intensity exercise with no rest □

5. Which of the following is not an example of anaerobic exercise?
   a. 100m sprint □
   b. Shot putt □
   c. 50m swim □
   d. 1500m race □

6. Identify the pathway of air to the lungs

……

7. Explain what happens to oxygen during diffusion

……

8. Describe what happens if pressure in the lungs increases?

……

9. Describe what happens to the diaphragm during expiration?

……

10. Give the equation for aerobic exercise

……

GCSE Effects of Exercise: What do I need to know?

Understand the short term effects of exercise on the body systems, understand the long term effects of exercise on the body systems.

Short Term Effects

Effect	What happens	Why?
Muscle Temperature		
HR/SV/Q		
Redistribution of blood		
TV/VE/BR		
Oxygen to muscles		
Lactic acid production		

Long Term Effects

Effect	What happens	Why?
Bone Density		
Muscle Hypertrophy		
Muscular Strength		
Muscular Endurance		
Resistance to Fatigue		
Rate of Recovery		
Aerobic Capacity		
Respiratory Muscles		

1. Which one of the following is a short term effect of exercise on muscles?
   a. An increase in muscle temperature □
   b. A decrease in hypertrophy of muscle fibres □
   c. An increase in rate of recovery □
   d. A decrease in minute volume □

2. Which one of the following is a long-term effect of exercise on the muscular system?
   a. An increase in tidal volume in muscles □
   b. A decrease in blood flow to muscle fibres □
   c. An increase in muscle fatigue □
   d. An increase in tolerance to lactic acid □

3. Which one of the following is an example of a long term effect of exercise on the heart?
   a. Increase in tidal volume □
   b. Decrease in resting heart rate □
   c. Increase in heart disease □
   d. Decrease in stroke volume □

4. Which one of the following is an effect of lactic acid?
   a. Gives you a feeling of excitement □
   b. Causes extreme hunger pains □
   c. Helps to create oxygen in the lungs □
   d. Causes muscle fatigue during exercise □

5. Which one of the following is a short term effect of exercise on the muscular system?
   a. Decrease in stroke volume □
   b. Increase in the temperature of the muscles □
   c. Decrease in blood flow from the heart □
   d. Increase in muscle mass □

6. Identify one short-term effect of exercise on the respiratory system

……

7. Identify one short-term effect of exercise on the cardiovascular system

……

8. Identify one long-term effect of exercise on the respiratory system

……

9. Identify one long-term effect of exercise on the cardiovascular system

……

10. Identify one long-term effect of exercise on the skeletal system

……

GCSE Components of Fitness: What do I need to know?

Know the definition, examples of and fitness tests for the components of fitness.

Component	Definition	Examples
Agility		
Balance		
Coordination		
Power		
Agility		
Reaction Time		
Muscular Strength		
Muscular Endurance		
Cardiovascular Endurance		
Speed		

GCSE Components of Fitness: What do I need to know?

Know the definition, examples of and fitness tests for the components of fitness.

Component	Fitness Test	Description
Agility		
Balance		
Coordination		
Power		
Agility		
Reaction Time		
Muscular Strength		
Muscular Endurance		
Cardiovascular Endurance		
Speed		

1. Which one of the following is a suitable test for measuring strength?
    a. The 400 metre race test □
    b. The sit and reach test □
    c. The arm wrestling test □
    d. The grip dynamometer test □

2. Which one of the following is a suitable test for flexibility?
    a. 30 metre sprint test □
    b. Sit and reach test □
    c. Grip dynamometer test □
    d. Sit-up test □

3. Muscular endurance is a component of fitness. Which one of the following best describes a good level of muscular endurance?
    a. To be able to run fast over 20 metres □
    b. To be able to keep lifting a weight without tiring too soon □
    c. To be able to stretch down to the floor with straight legs □
    d. To be able to lift a very heavy weight once □

4. Which of the following is the definition for power?
    a. Speed x strength □
    b. Speed + strength □
    c. Speed – strength □
    d. Speed / strength □

5. Which of the following is the definition of flexibility?
    a. The amount of movement □
    b. How far you can stretch □
    c. The range of movement at a joint □
    d. How bendy you are □

6. What is the definition of speed?

……

7. What is the definition of coordination?

……

8. What is the definition of balance?

……

9. Name a fitness test suitable for agility.

……

10. Name a fitness test suitable for power.

……

GCSE Methods of Training: What do I need to know?

Know the definitions, examples of and who the following methods of training are suitable for.

Training Method	Definition	Example	Who would it be suitable for?
Circuit Training			
Fartlek Training			
Continuous Training			
Weight Training			
Plyometric Training			
Interval Training			

1. Which one of the following is the best method of exercise to improve cardiovascular endurance?
    a. Yoga ▫
    b. Spin ▫
    c. Pilates ▫
    d. Weight training ▫

2. Which of the following is an example of interval training?
    a. 30 seconds run, 30 seconds jog, 30 seconds walk ▫
    b. 30 seconds run, 10 seconds rest, 30 second run ▫
    c. 2-minute run ▫
    d. 10 second sprint, 30 second rest, 10 second sprint ▫

3. Which of the following is an example of continuous training?
    a. 30 seconds run, 30 seconds jog, 30 seconds walk ▫
    b. 30 seconds run, 10 seconds rest, 30 second run ▫
    c. 2-minute run ▫
    d. 10 second sprint, 30 second rest, 10 second sprint ▫

4. Which of the following is an example of fartlek training?
    a. 30 seconds run, 30 seconds jog, 30 seconds walk ▫
    b. 30 seconds run, 10 seconds rest, 30 second run ▫
    c. 2-minute run ▫
    d. 10 second sprint, 30 second rest, 10 second sprint ▫

5. Which of the following is an example of high intensity interval training?
    a. 30 seconds run, 30 seconds jog, 30 seconds walk ▫
    b. 30 seconds run, 10 seconds rest, 30 second run ▫
    c. 2-minute run ▫
    d. 10 second sprint, 30 second rest, 10 second sprint ▫

6. Describe weight training

……

7. Describe plyometric training

……

8. Describe circuit training

……

9. Give an example of an interval session other than the one above.

……

10. Give an example of a weight training session.

……

GCSE Principles of Training: What do I need to know?

Know the definitions, and be able to apply them to a training programme.

Principle	**Definition**	**Example**
Specificity		
Progression		
Overload		
Reversibility		
Frequency		
Intensity		
Time		
Type		

1. Which of the following training methods is most suited to a football player?
    a. Fartlek training ▫
    b. Weight training ▫
    c. Continuous training ▫
    d. Interval training ▫

2. Which of the following training methods is most suited to a 100m sprinter?
    a. Fartlek training ▫
    b. Weight training ▫
    c. Continuous training ▫
    d. Interval training ▫

3. Which of the following training methods is most suited to a sumo wrestler player?
    a. Fartlek training ▫
    b. Weight training ▫
    c. Continuous training ▫
    d. Interval training ▫

4. Which of the following training methods is most suited to a marathon runner?
    a. Fartlek training ▫
    b. Weight training ▫
    c. Continuous training ▫
    d. Interval training ▫

5. What does SPOR stand for?
    a. Specific, progression, overdo, redo ▫
    b. Specificity, progression, overload, reversibility ▫
    c. Special progressive overload rate ▫
    d. Specificity personal, overload, reversibility ▫

6. What are the four principles of overload?

……

7. Give a training methods specific for a gymnast?

……

8. How could a weight lifter make their weight training session harder?

……

9. How could a runner increase the intensity of their workout?

……

10. How can an athlete avoid reversibility in their training?

……

GCSE Warm Ups & Cool Downs: What do I need to know?

Understand the key components of a warm up and cool down and understand the physical benefits.

Warm Up Component	Reason	Example
Pulse Raiser		
Mobility		
Stretching		
Dynamic Movements		
Skill Rehearsal		

Cool Down Component	Reason	Example
Low Intensity Exercise		
Stretching		

Benefits of a Warm Up	Benefits of a Cool Down
1. 2. 3. 4. 5.	1. 2. 3. 4. 5.

1. Which one of the following is not a reason to warm up before a physical activity?
    a. To reduce the risk of injury ▫
    b. To remove lactic acid ▫
    c. To prepare the body for exercise ▫
    d. To mentally prepare ▫

2. Which of the following is the best example of a warm up?
    a. To do as many fast sprints as possible and then to mentally focus ▫
    b. To go for a light jog and then to stretch the main muscle groups ▫
    c. To wear a thick tracksuit and talk to your coach about the game ▫
    d. To do some stretching and then consume a warm drink before playing ▫

3. Which one of the following best describes the importance of the cool down following physical exercise?
    a. It helps to cope with failure in a sports competition ▫
    b. It lowers the temperature of the body more quickly ▫
    c. It repairs muscle damage ▫
    d. It speeds the removal of lactic acid ▫

4. Which of the following elements is not part of an appropriate warm-up?
    a. Pulse raiser ▫
    b. Dynamic stretches ▫
    c. Skill drill ▫
    d. Pre match meal ▫

5. Which of the following is not a benefit of cooling down?
    a. Helps to lower the temperature of the body ▫
    b. Helps to remove lactic acid ▫
    c. Helps to lower the heart rate ▫
    d. Increases the chance of injury ▫

6. Describe one part of a warm up suitable for a footballer

……

7. Give one benefit of a warm up not listed above.

……

8. Describe a suitable cool down for a cyclist.

……

9. Give one benefit of stretching as part of a warm up.

……

10. Give one benefit of stretching as part of a cool down.

……

GCSE Injury Prevention: What do I need to know?

Understand how the risk of injury can be reduced and know potential hazards in a range of settings.

Setting	Potential Hazards
Sports Hall	
Fitness Centre	
Playing Fields	
Swimming Pool	
Artificial Turf	

Method of Reducing Risk	Sporting Examples
Personal Protective Equipment	
Correct Clothing / Footwear	
Appropriate Level of Competition	
Lifting & Carrying Equipment Safely	
Use of Warm Up / Cool Down	

1. Which one of the following is a hazard in a swimming pool?
    a. Concussion of a swimmer after diving in □
    b. Lockers for your clothes and valuables are broken □
    c. Too much chlorine in the water □
    d. Cutting your foot on the way into the pool
2. Which one of the following is an example of minimising risks in a leisure centre gymnasium?
    a. Let someone else work on the equipment after 20 minutes □
    b. Always work at maximum effort □
    c. Wear a brightly coloured top when training □
    d. Store the weights away when you have finished □
3. Which one of the following is an example of reducing risks and injuries during physical activities?
    a. Always trying your best in an activity □
    b. Wearing a mouth guard in hockey □
    c. Playing to win at all times □
    d. Shaking hands with your opponents after the game □

4. Give one example of a hazard on a sports field

……

5. Give one example of a hazard on an astro turf

……

6. Give one example of a hazard in a swimming pool, other than those listed above

……

7. Give one example of a hazard when playing football

……

8. Give one example of how to reduce the risk of injury in rugby

……

9. Give one example of how to reduce the risk of injury in gymnastics

……

10. Give an example of a piece of protective equipment used in cricket

……