

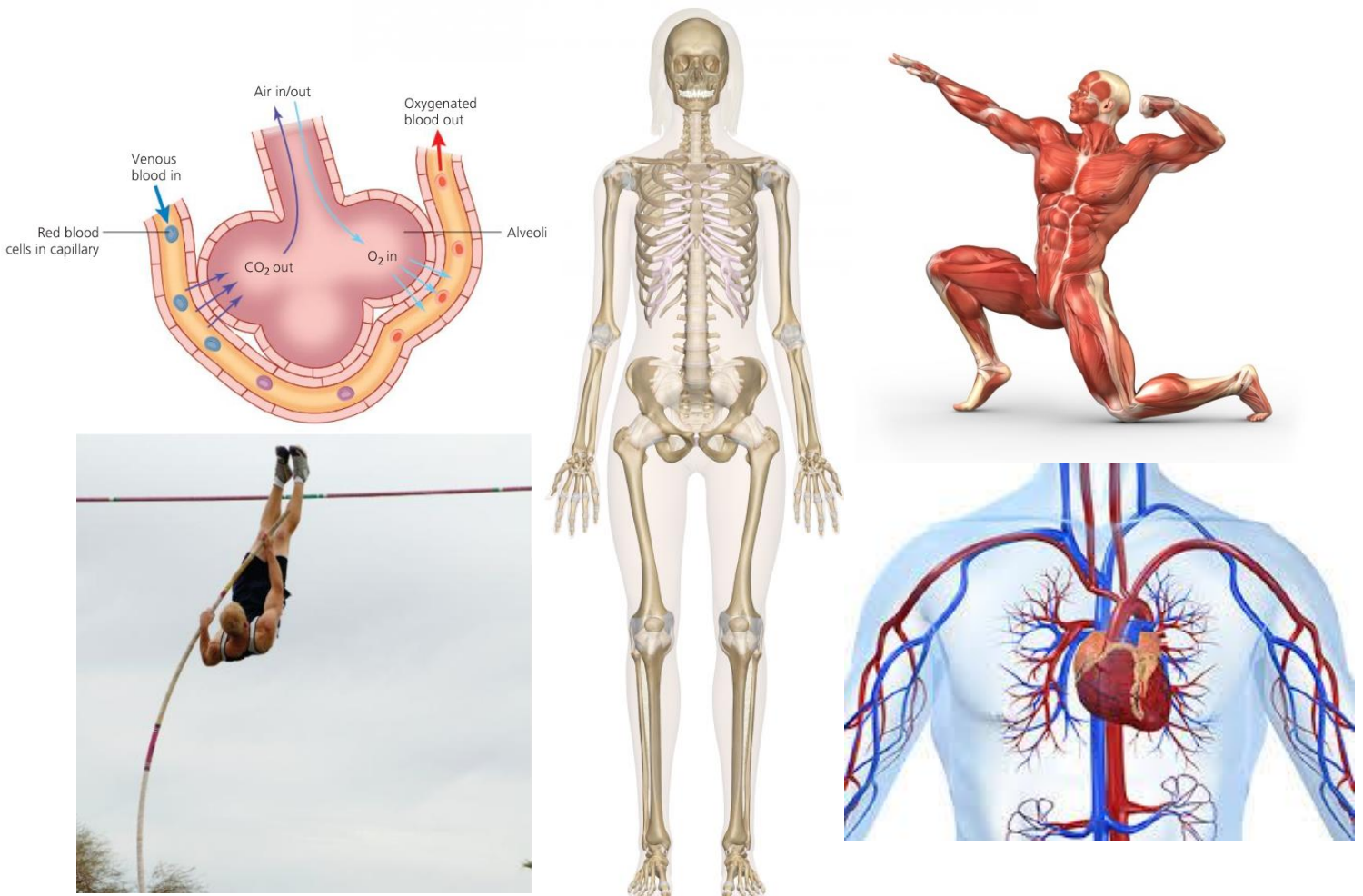


Sawtry Village
Academy

GCSE Physical Education → A-level PE

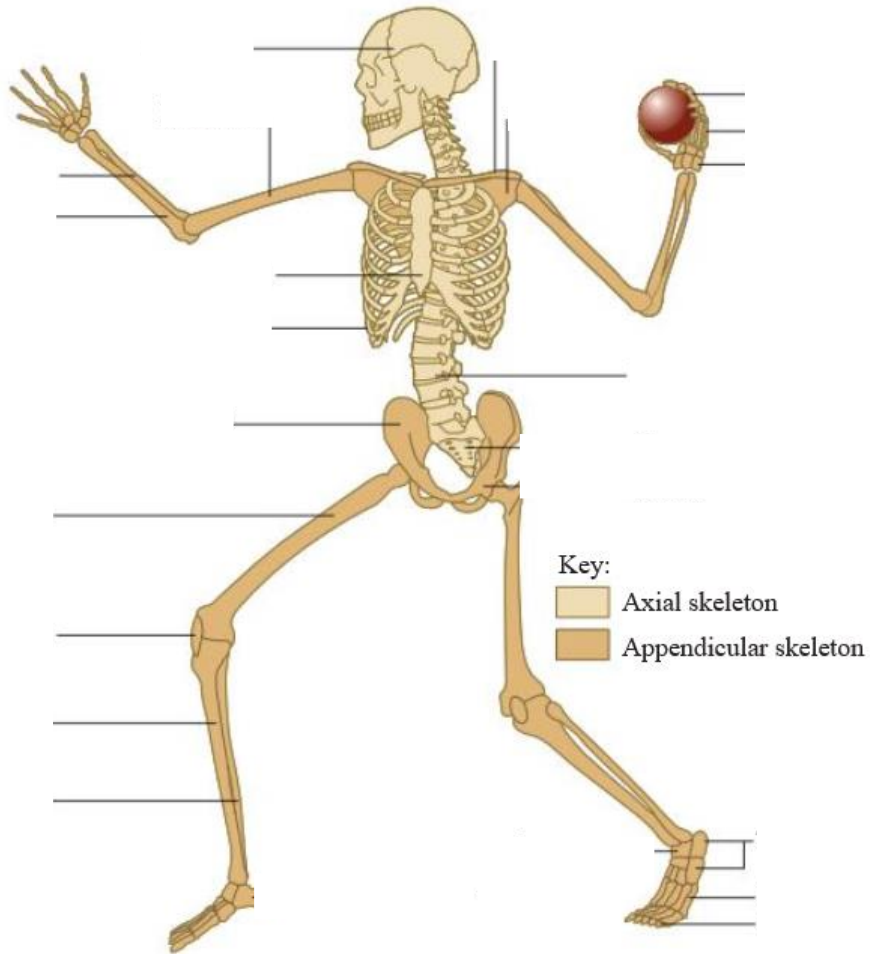
Bridging the gap

Applied Anatomy and Physiology and Skill acquisition



1.1 The structure and function of the skeletal system

Label the bones of the skeleton:



Name the 5 functions of the skeleton. For each function, relate it to a sporting example of your choice.

<i>Functions of the skeleton</i>	<i>Sporting example</i>

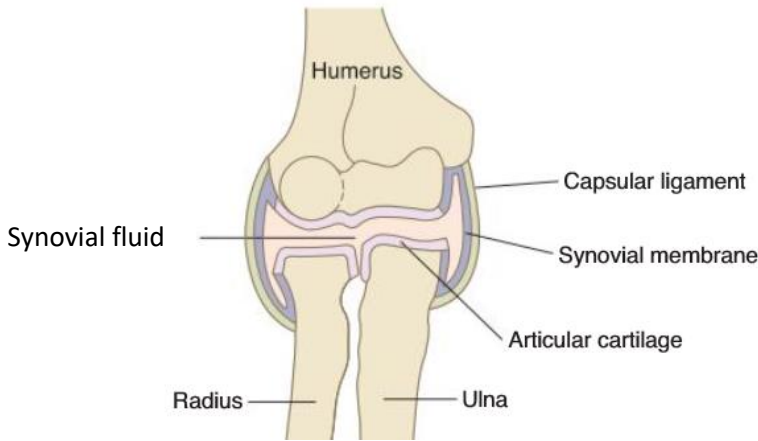
Remember the phrase:

Sausage **S**andwiches, **M**ay, **P**roduce, **P**ersonal **B**ests, **S**o **M**unch

1.1 The structure and function of the skeletal system

What is a joint?

What is a synovial joint?



Synovial fluid is released by the:
Synovial fluid is important because...

Define the term 'articulating bones'?

There are 3 other main components of a joint:

Ligaments:
Function -

Characteristics -

An example of a ligament is...

Tendons
Function -

Characteristics -

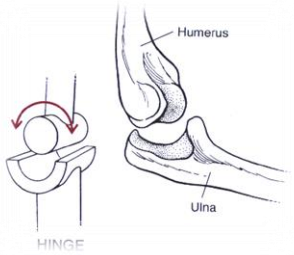
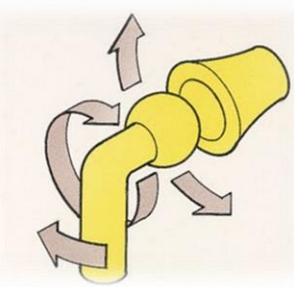
An example of a tendon is...

Cartilage:
Function -

Characteristics -

An example where cartilage is required is...

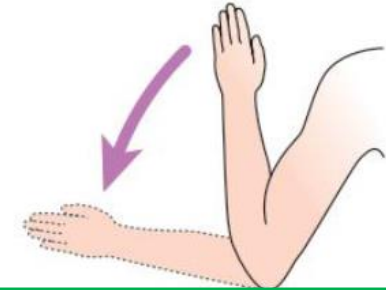
1.1 The structure and function of the skeletal system

Type of Joint	What type of movement does it allow?	Example in the body	Sporting Example
Hinge Joint: <i>Knee and elbow</i> 			
Ball and Socket Joint Hip and shoulder 			

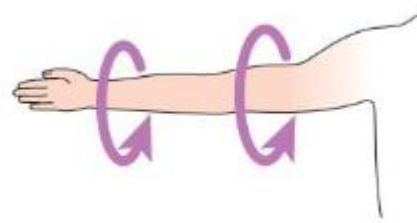
Name the movements shown below and identify the joint:



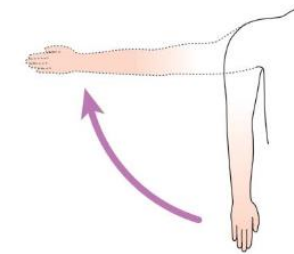
Joint:
Movement:



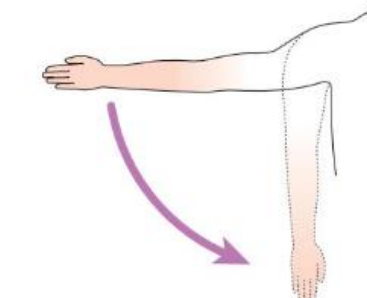
Joint:
Movement:



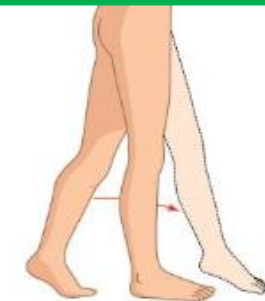
Joint:
Movement:



Joint:
Movement:



Joint:
Movement:



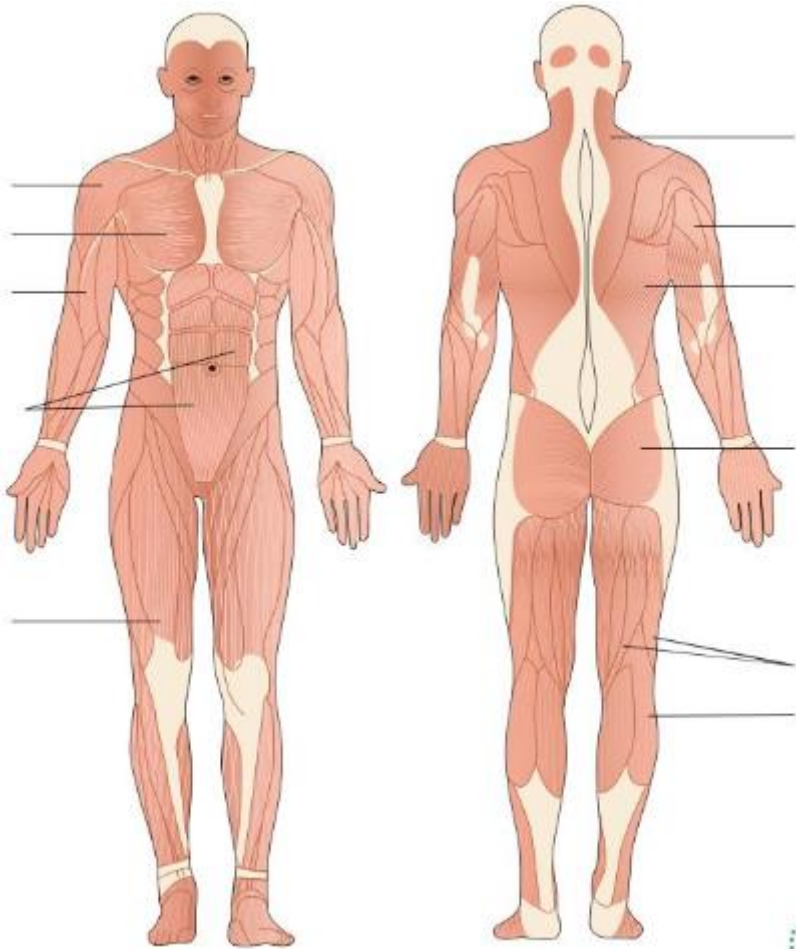
Joint:
Movement:

The 7 types of movement possible at these joints are:

- Flexion
- Extension
- Adduction
- Abduction
- Circumduction
- Rotation
- Plantar flexion (ankle only)

1.2 The structure and function of the muscular system

Label the muscles:



Explain the following key terms:

Agonist –

Antagonist –

Fixator –

Antagonistic pairs –

Explain how antagonistic pairs allow the 2 movements below

<p>The diagram shows a human arm in a flexed position. The biceps muscle is highlighted in red and is shown contracting. The triceps muscle is also highlighted in red. A blue arrow points upwards, indicating the direction of movement.</p>	<p><i>Flexion</i></p>
<p>The diagram shows a human arm in an extended position. The triceps muscle is highlighted in red and is shown contracting. The biceps muscle is also highlighted in red. A blue arrow points downwards, indicating the direction of movement.</p>	<p><i>Extension</i></p>

1.2 The structure and function of the muscular system

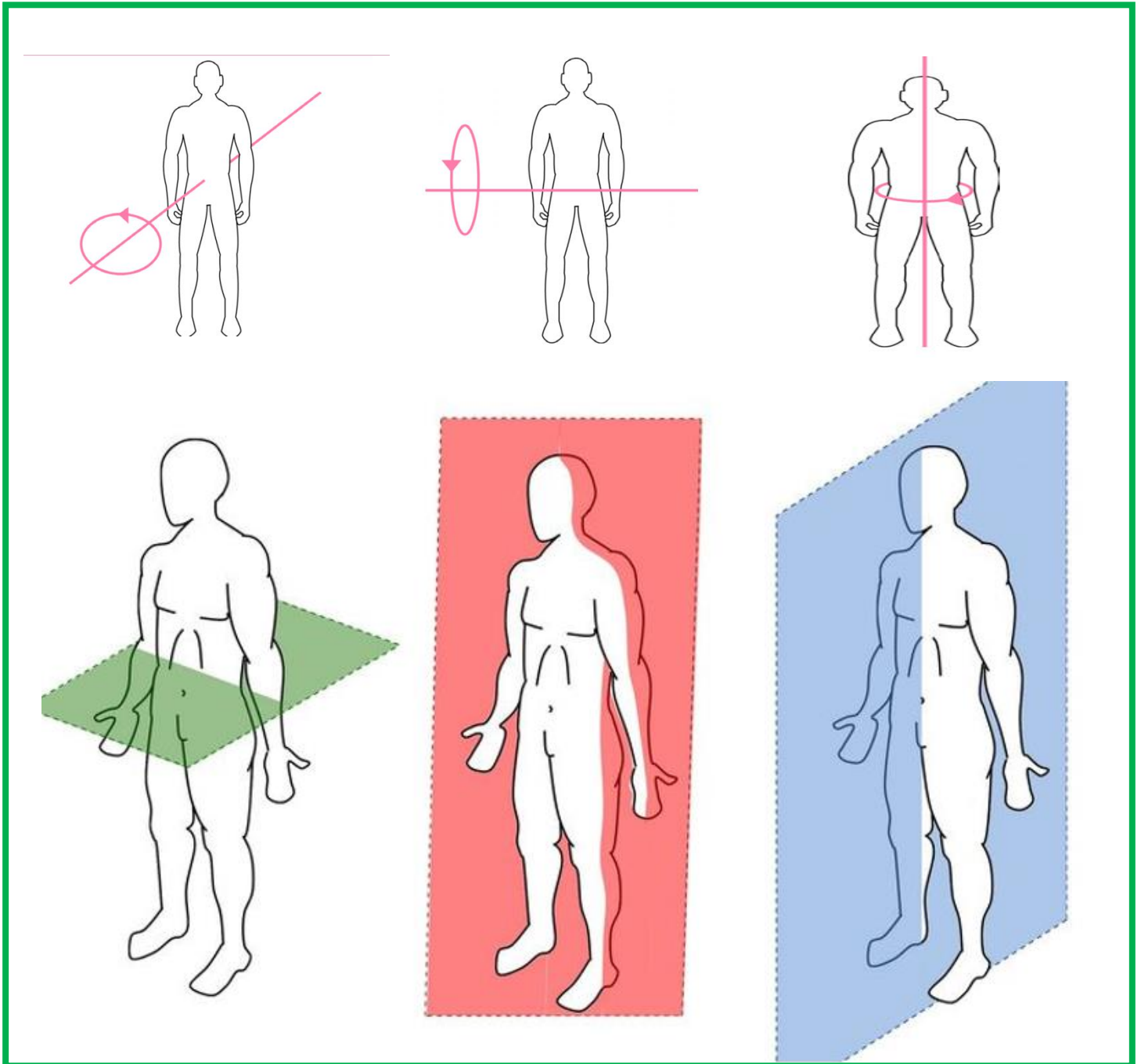
Label the movements at the joints shown and name the **agonist muscle**





Movement analysis

Label the planes and axes below and link them into pairs
Remember. Silly Tommy, Frequently Forgets, Todays Lessons.



Task: Identify and describe the dominant plane of movement for the following:

Plane of movement:



Description:



Plane of movement:

Description:



Plane of movement:

Description:

Task: Identify and describe the dominant axis of rotation for the following:



Axis of rotation:

Description:



Axis of rotation:

Description:



Axis of rotation:

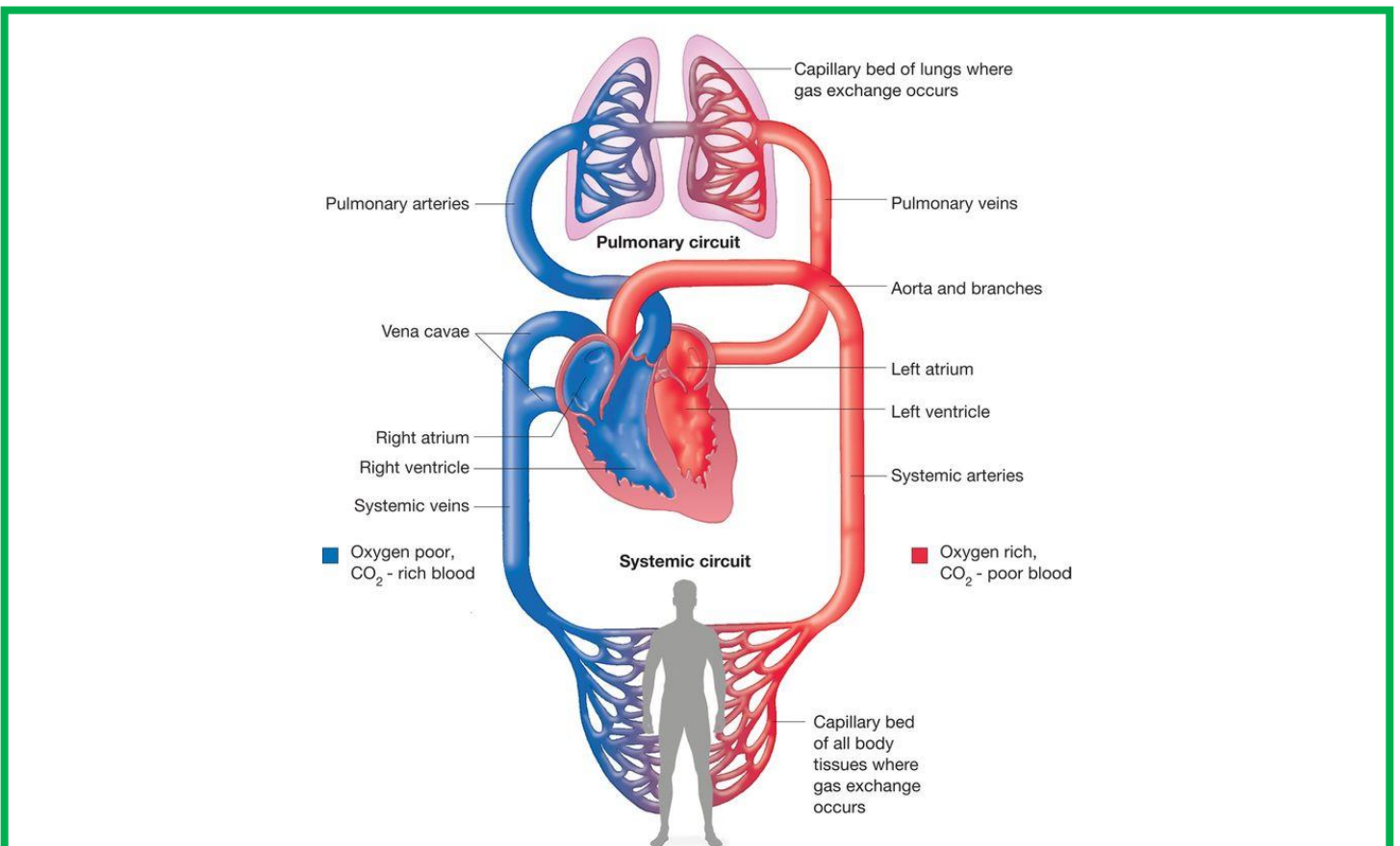
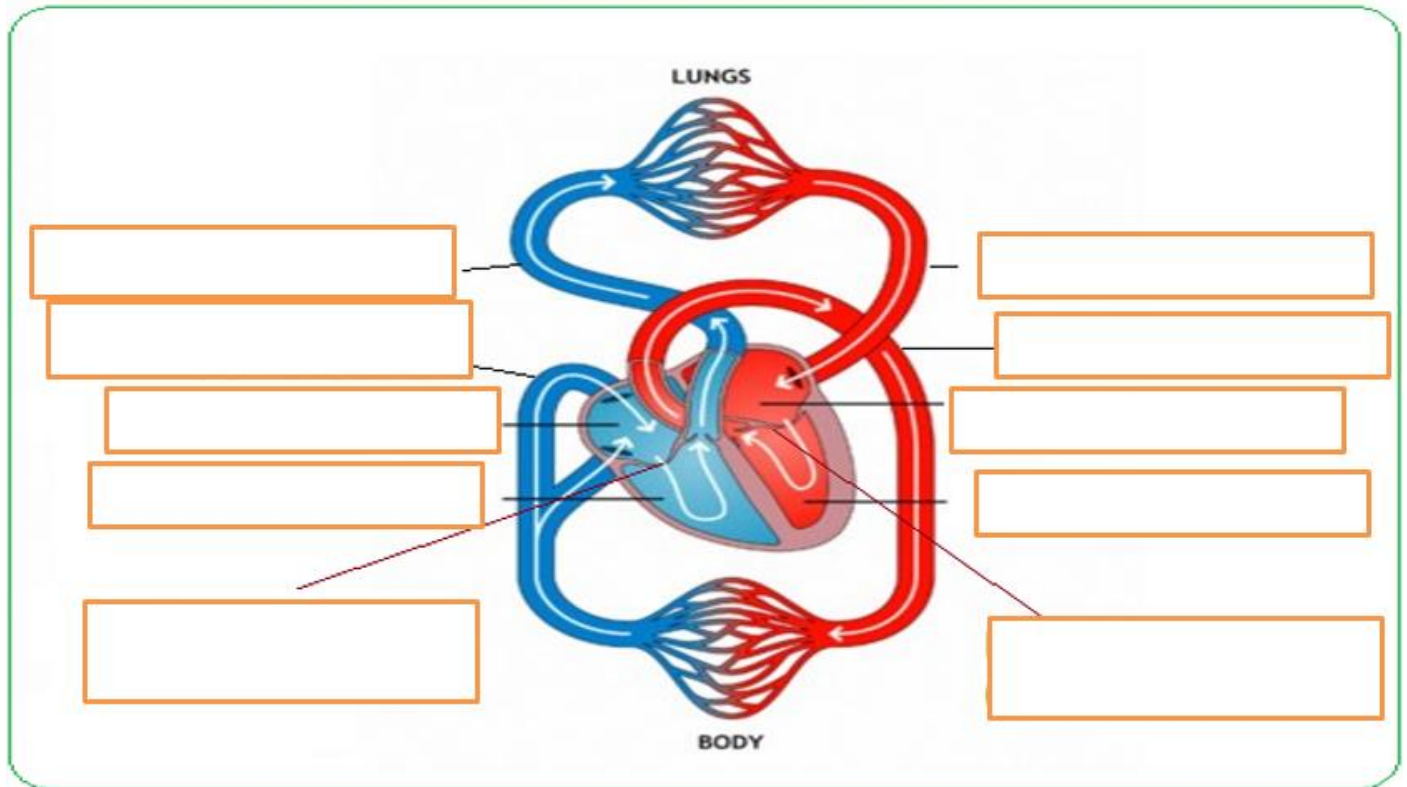
Description:

1.3 The cardiovascular system


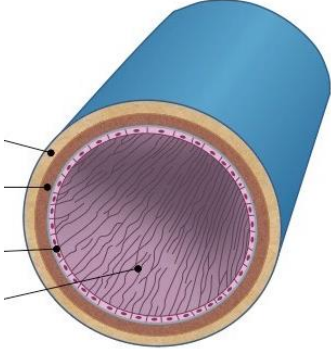
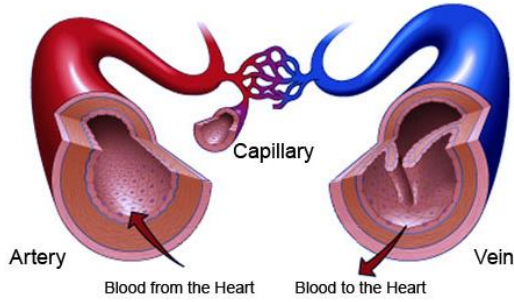
The CV system has 3 main components which are:

- 1)
- 2)
- 3)

The function of the CV system is...



1.4 The cardiovascular system

Image	Blood vessel type	Characteristics
 A 3D cutaway illustration of an artery. The vessel is red and has a thick, muscular wall. The lumen is filled with numerous red blood cells. A small watermark 'wiseGEEK' is visible at the bottom right of the image.		
 A 3D cutaway illustration of a capillary bed. The vessel is blue and has a very thin wall. The lumen is filled with a dense network of fine capillaries. Several lines with dots point to the internal structure of the vessel wall.		
 A diagram showing three types of blood vessels. On the left is a red artery with a thick wall and a narrow lumen, labeled 'Artery' and 'Blood from the Heart'. In the middle is a capillary bed, labeled 'Capillary'. On the right is a blue vein with a thin wall and a wide lumen, labeled 'Vein' and 'Blood to the Heart'. Arrows indicate the direction of blood flow from the artery to the capillary and then to the vein.		

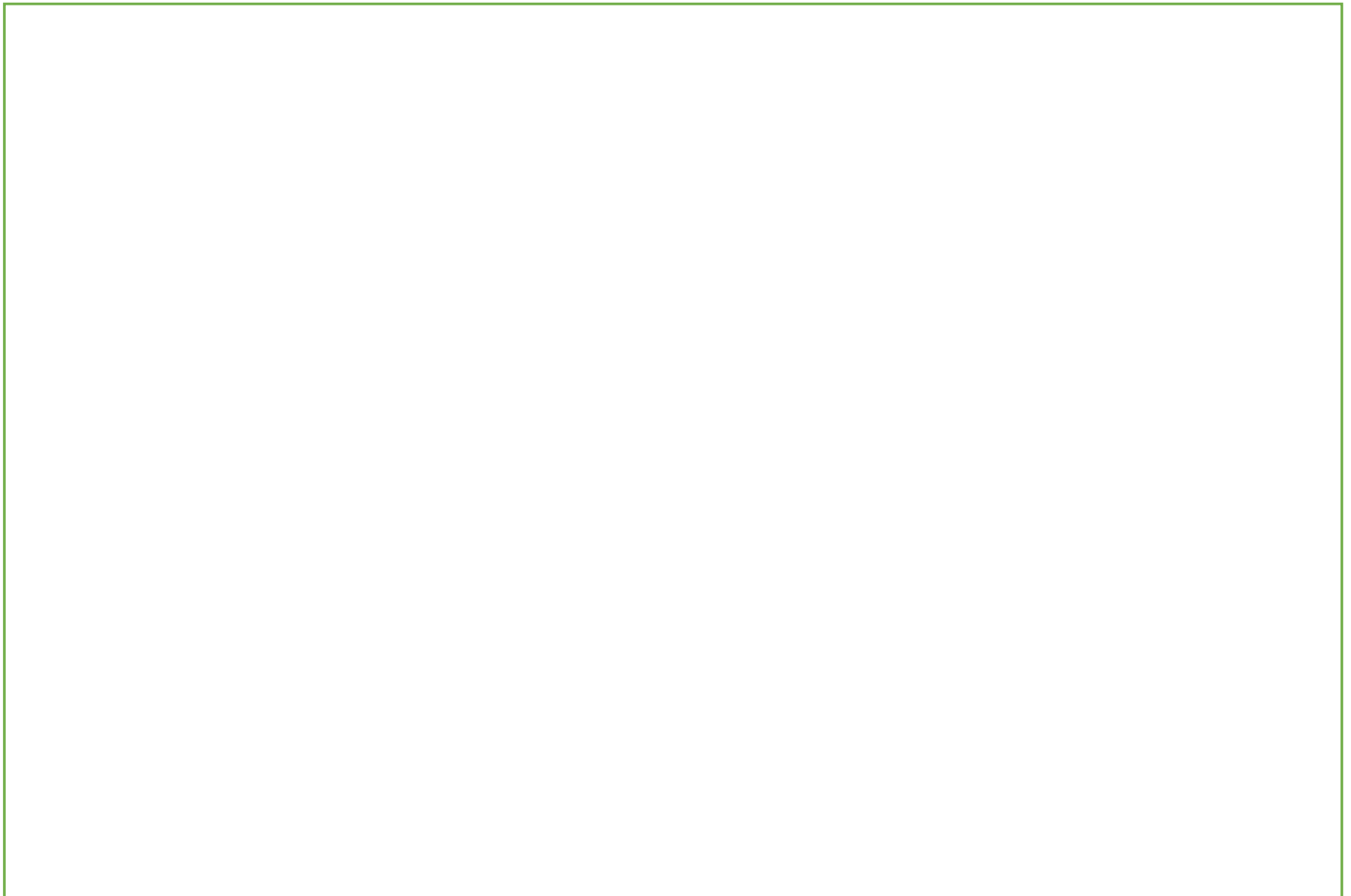
Task: Define the following key terms.

Heart rate:

Stroke Volume:

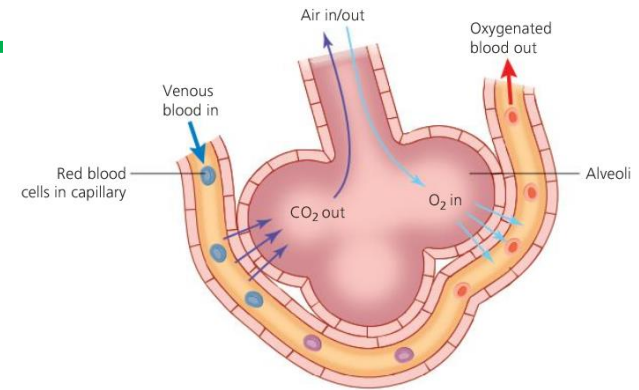
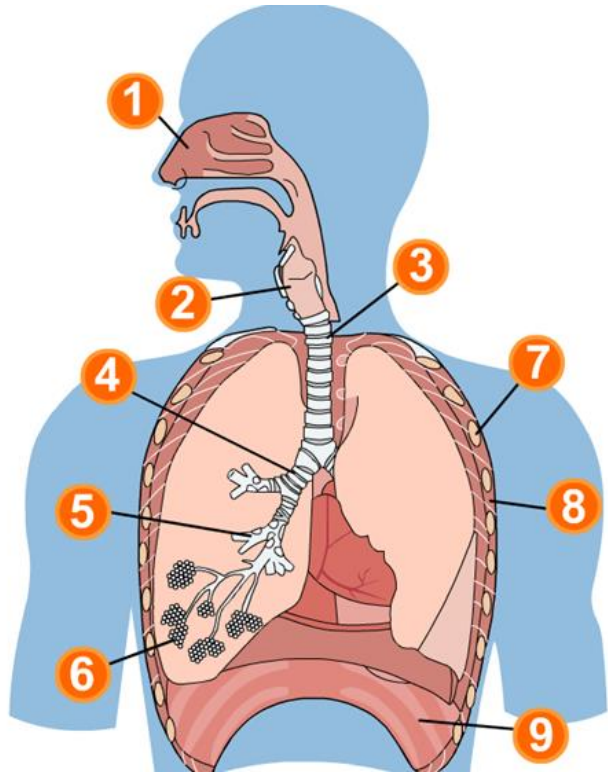
Cardiac output:

In the box below describe the link between each and how each will change during exercise?



1.4 The respiratory system

Label the components of the respiratory system



Explain in detail what is happening in the image above.

Explain the role of respiratory muscles when breathing.

The function of the respiratory system is...

1.4 The respiratory system

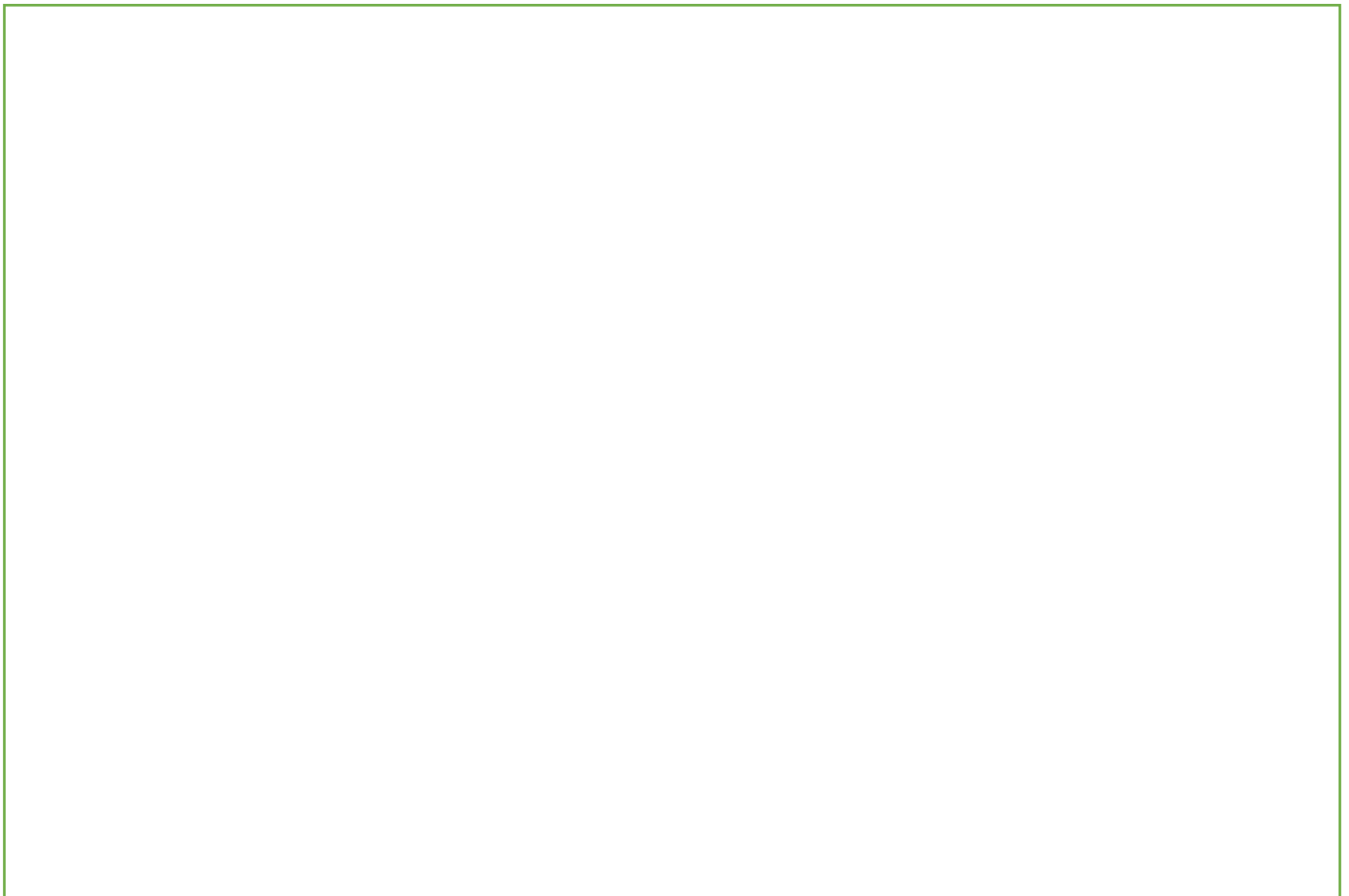
Task: Define the following key terms.

Breathing rate:

Tidal volume:

Minute ventilation:

In the box below describe the link between each and how each will change during exercise?



The effects of exercise on the body systems

Muscular system

Skeletal system

**Short term
(immediate) effects
of exercise**

Cardiovascular system

Respiratory system

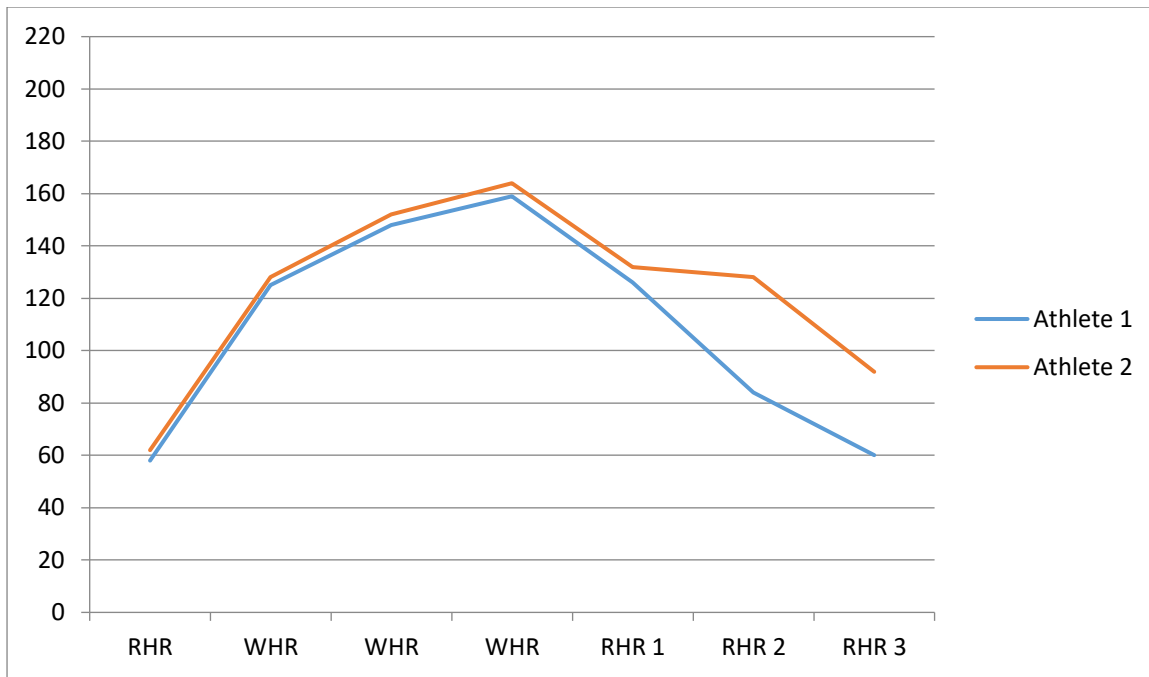
Muscular system

Skeletal system

Long term effects
of exercise

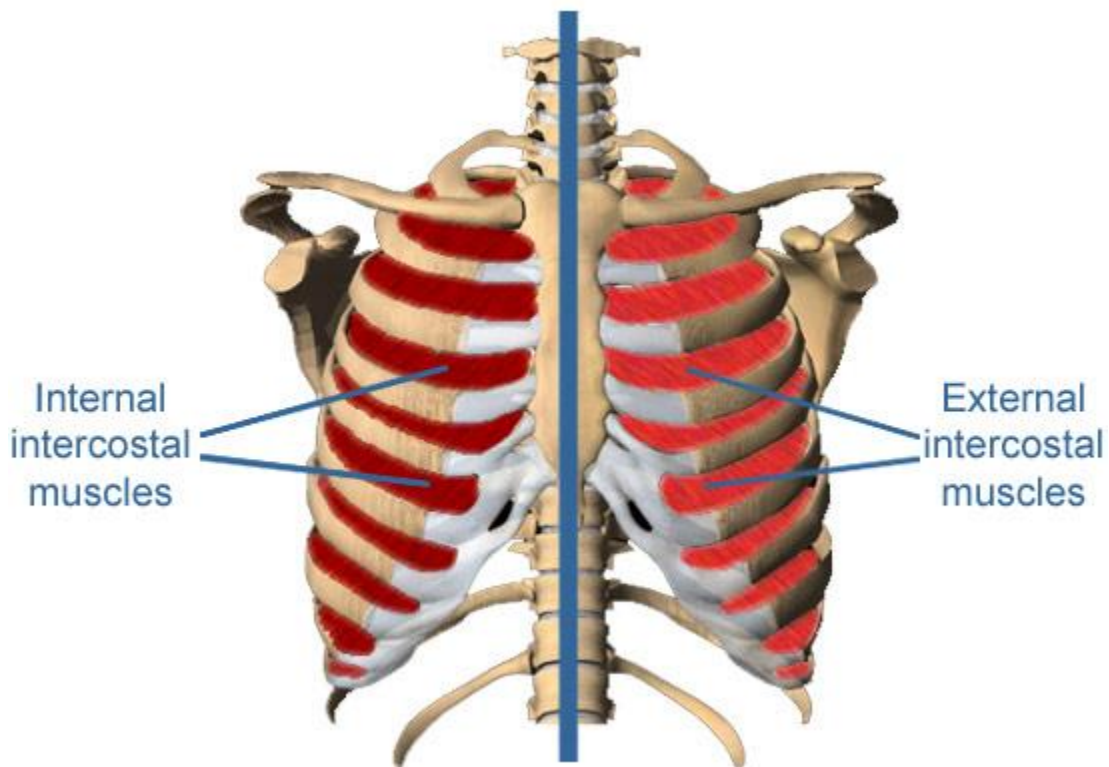
Cardiovascular system

Respiratory system



Task: Considering the Above Graph what evidence is there to suggest that Athlete 1 has experienced some long term effects of training as a result of regular exercise.

A large empty rectangular box with a green border, intended for the student's response to the task.



Task: Explain in the space below how an increase in Intercostal muscle strength will affect Minute ventilation and tidal volume.

Skill acquisition:

4.1 Characteristics of skilful movement and classification of skills

Define the term 'motor skill'

Define the term 'skilful movement'

There are 5 characteristics of skilful movement:

Remember the acronym:

PECAF

	Explanation	Sporting example
Predetermined		
Efficient		
Coordinated		
Aesthetic		
Fluent		

Perception skills:

Cognitive skills:

4.1

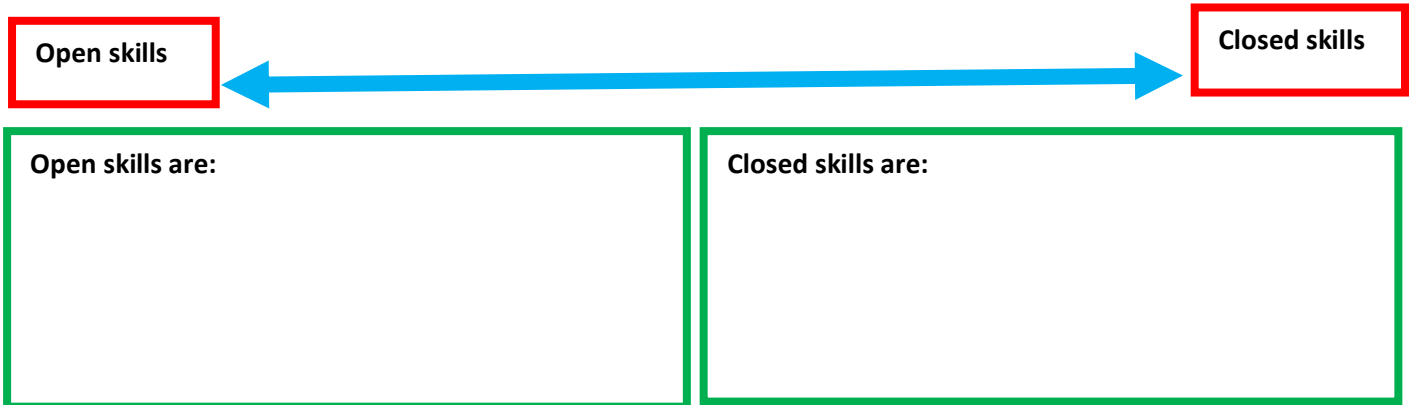
Name the two continua which are used to classify skills:

1)

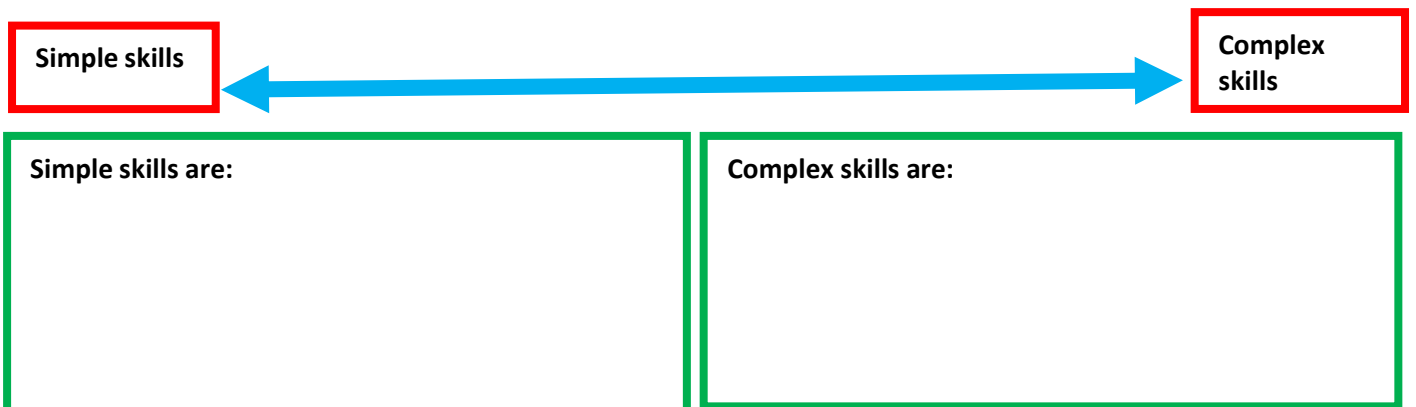
2)

Skill classification

Environmental continuum:



Difficulty continuum:



Looked at It

Nearly There

Nailed IT!

How would the classification of a skill potentially affect the coaching/training of an athlete?

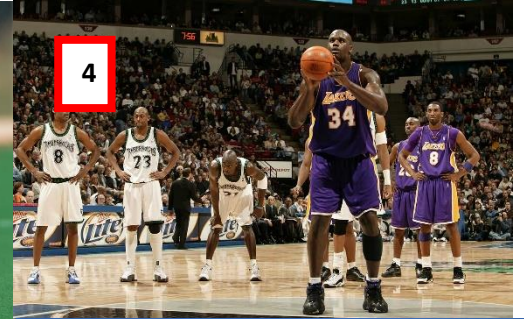
Open skills

Closed skills

Simple skills

Complex skills

Place the skills performed in the images below on both the Environmental and Difficulty continua.



4.2 Goal setting

Why is it important for an athlete/coach to set goals?

How do we set effective goals?

S M A R T

What are the main reasons for athletes not reaching their goals?



Set a SMART target for the athlete:



Set a SMART target for the athlete:



Set a SMART target for the athlete:

4.4 Types of guidance

When is guidance given to a performer?

Name the 4 types of guidance used in sport:

- 1)
- 2)
- 3)
- 4)

Match the image to the type of guidance

Remember the acronym:

VVMM



Type of feedback	Explanation	Strengths	Weaknesses
<i>Verbal</i>			
<i>Visual</i>			
<i>Manual</i>			
<i>Mechanical</i>			

