

## Getting Ready For *Physical Education*

Your Name		
A Level PE	Anatomy and Physiology	AQA

**We are delighted you have chosen to study Physical Education at Worthing College.**

**Instructions:** This pack will help you make the best possible start to studying this subject.

The tasks in this pack:

- should take you **about 4 hours to complete**.
- should be handed into your teacher when teaching starts **from 14<sup>th</sup> September 2020** with your name on it for assessment.
- are also available on the internet – follow the links in the document.

**If you need help:** The tasks are designed to get a bit more difficult as you work through them as they are preparing you for studying at a higher level and to become an effective independent learner. You should try to get as far as you can working on your own but if you do need help, please email us at [gettingreadyfor@worthing.ac.uk](mailto:gettingreadyfor@worthing.ac.uk), telling us which Getting Ready For pack you are working on and what help you need. Help is available throughout the summer holidays.

**Your PE teachers are also available if you would like to get in touch with any questions and queries:** [c.turner@worthing.ac.uk](mailto:c.turner@worthing.ac.uk) (subject leader) or [m.rugman@worthing.ac.uk](mailto:m.rugman@worthing.ac.uk)

Skills Focus for this Getting Ready for Pack	
Effective <a href="#">note taking</a> A01 – making sure you use the appropriate key term and define it	A02 – make sure you apply the correct key term – using the appropriate practical application and context A02 – <a href="#">make sure you can evaluate the theory</a> – giving opposing points of view and use connectives to help with this

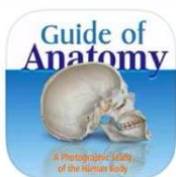
**If you need help the Worthing College ‘Skills for Successful Study Programmes’ can help you.**

<https://www.worthing.ac.uk/study-skills>

## An Introduction to Anatomy Workbook

In preparation to begin study on the A1 PE course at Worthing College, you are required to show a base of knowledge and understanding in Anatomy. If you have studied GCSE PE then some of this information should be familiar. However, don't worry if you haven't. Below are a couple of references that you can use to help you:

- Anatomy Zone YouTube Channel - <http://www.youtube.com/user/TheAnatomyZone>
- Or Anatomy Zone video tutorial links - <http://anatomyzone.com/category/tutorials/basics/page/2/>
- Or download one or more of the following **free** iPhone/iPad apps (Android apps are also available)



Anatomy Guide



Anatomy & Physiology



Teach Me Anatomy

Please write down ALL references used at the back of this booklet!

## The Skeletal System

DESCRIBE the 5 functions of the skeleton:

Support

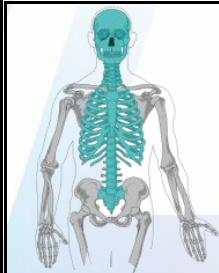
Protection

Attachment

Blood cell  
production

Mineral  
Storage

What is the Axial skeleton?



What is the Appendicular skeleton?



**Cranium**

**Clavicle**

**Ribs**

**Humerus**

**Sternum**

**Ulna**

**Radius**

**Pubis**

**Femur**

**Patella**

**Fibula**

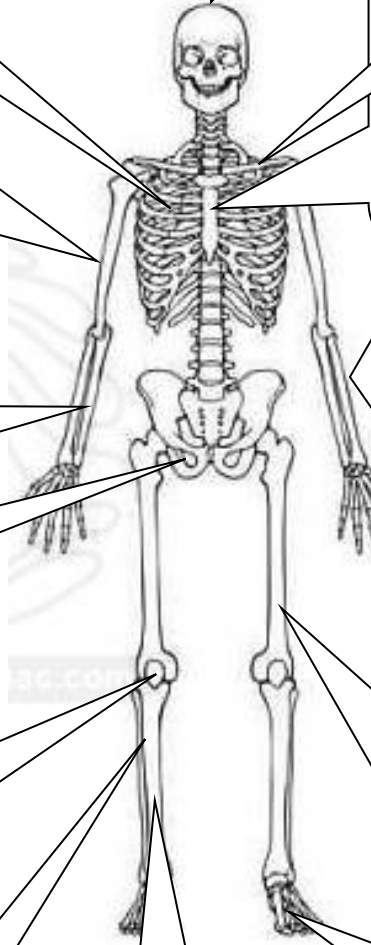
**Tarsals**

**Tibia**

**Metatarsals**

**Phalanges**

**DESCRIBE the major bones of the skeletal system.**



**DESCRIBE the major bones of the skeletal system.**

**Scapula**

**Cervical vertebrae**

**Thoracic vertebrae**

**Lumbar vertebrae**

**Ilium**

**Sacrum**

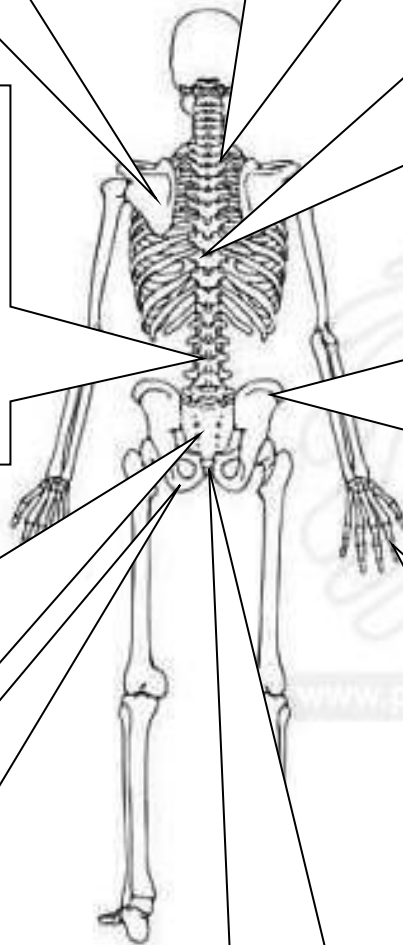
**Carpals**

**Ischium**

**Coccyx**

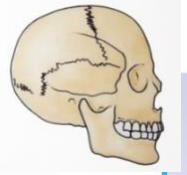
**Metacarpals**

**Phalanges**



DESCRIBE the 3 classifications of joint in the human body? EXPLAIN the range of movement each one allows by relating to examples from sport.

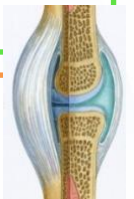
**Fixed**



**Slightly movable**



**Synovial**



Please provide additional notes here if required:

What are the 6 types of synovial joints in the human body? DESCRIBE  
Give an example of each in the human body.

• H \_\_\_\_\_

E.g.



• B \_\_\_\_\_ & \_\_\_\_\_

E.g.



• E \_\_\_\_\_

E.g.



• G \_\_\_\_\_

E.g.



• P \_\_\_\_\_

E.g.



• S \_\_\_\_\_

E.g.



Please provide additional notes if required:

DESCRIBE the main types of movement and give an example of when each movement is used in sport.



Flexion

• E.g.



Pronation

• E.g.



Extension

• E.g.



Supination

• E.g.



Abduction

• E.g.



Plantar flexion

• E.g.



Adduction

• E.g.



Dorsi flexion

• E.g.



Circumduction

• E.g.



Inversion

• E.g.



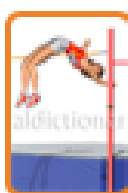
Rotation

• E.g.



Eversion

• E.g.



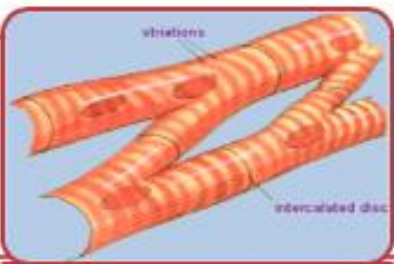


Hyperextension

• E.g.



**The Muscular System**

**What are the 3 types of muscle in the body? DESCRIBE**

		
<p><b>Cardiac</b></p>	<p><b>Skeletal</b></p>	<p><b>Smooth</b></p>

**What are the characteristics of the 3 main types of skeletal muscle fibre? Give an example of an athletics event that each fibre type is associated with.**

Type I	Characteristics:
Type IIa	Characteristics:
Type IIb	Characteristics:

**EXPLAIN** why each muscle fibre type is associated with the athletic event. Link the characteristics of the muscle fibre type to the demands of the event.

<b>Muscle fibre type:</b>	<b>Explanation:</b>
<b>Type I</b>	
<b>Type IIa</b>	
<b>Type IIb</b>	

What are the major muscles of the human body? Where is each one located? What movements does each one carry out? DESCRIBE in full sentences.

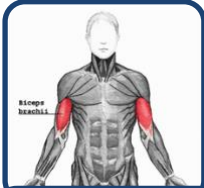
Muscle name	Location and Function
Biceps brachii	Located in the upper arm and produces flexion at the elbow joint.
Triceps brachii	
Deltoids	
Pectorals	
Rectus abdominis	
Quadriceps: - 1. _____ - 2. _____ - 3. _____ - 4. _____	
Hamstrings: - 1. _____ - 2. _____ - 3. _____	
Gastrocnemius	
Soleus	
Tibialis anterior	
Erector spinae	
Teres major	
Trapezius	
Latissimus dorsi	
Obliques	
Gluteus maximus	



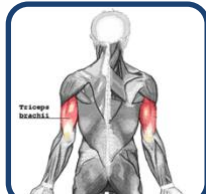
What is antagonistic muscle action? DESCRIBE

## Muscle movement

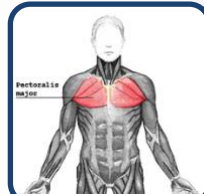
The pictures show the muscles involved in a bicep curl. DESCRIBE the role of each muscle.



Agonist



Antagonist



Synergist



Fixator

Concentric

Eccentric

Isometric

Isokinetic

Describe the 4 types of muscle contraction

**The Cardiovascular System**

**DESCRIBE each function of blood:**

**Oxygen transport:**

**Clotting:**

**Fighting infection:**

The Heart: DESCRIBE each component of the heart. Label the diagram by adding arrows from each box.

SUPERIOR VENA CAVA

AORTA

PULMONARY ARTERY

TRICUSPID VALVE

PULMONARY VEIN

BICUSPID VALVE

ATRIA

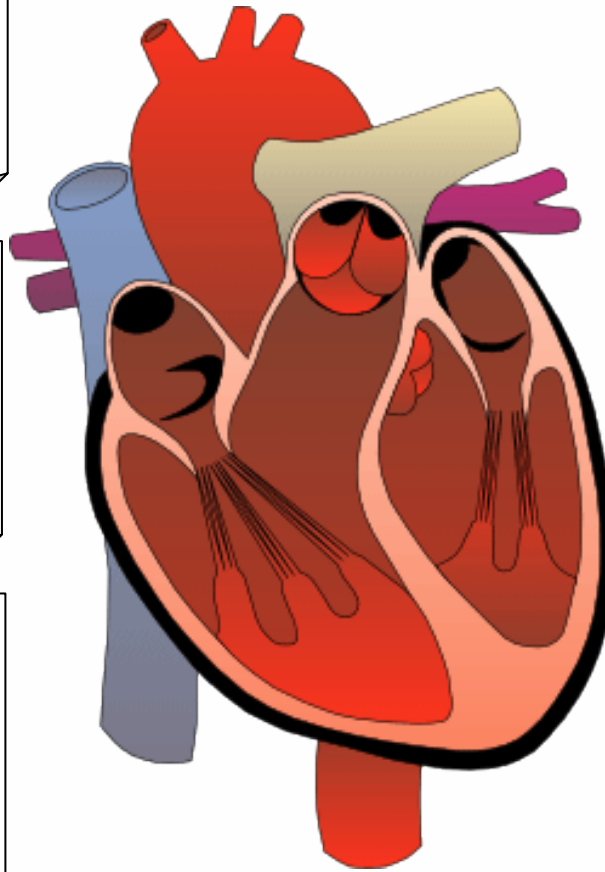
PULMONARY VALVE

AORTIC VALVE

INFERIOR VENA CAVA

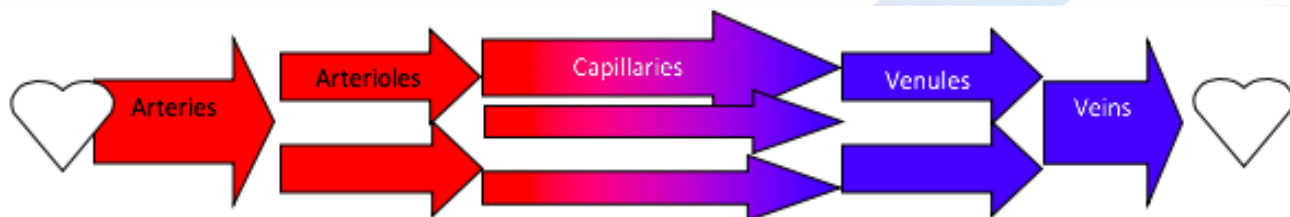
VENTRICLES

CHORDAE TENDINEAE



## Blood vessels

As the heart contracts, blood flows around the body in a complex network of vessels:



Briefly **DESCRIBE** the structural characteristics and function of each type of blood vessel.

Structure:

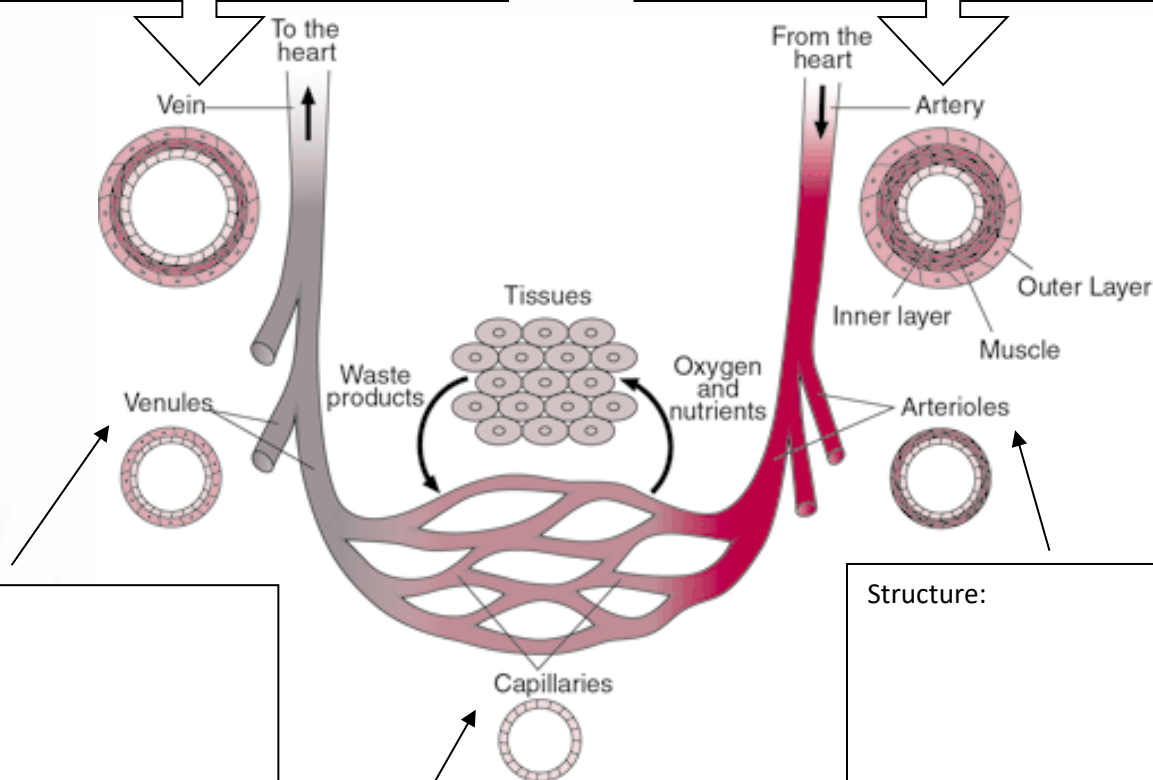
  
  
  

Function:

Structure:

Function:



Structure:

Function:

Structure:

Function:

Structure:

Function:

DESCRIBE the 3 functions of the Cardiovascular System and EXPLAIN the functions during exercise.

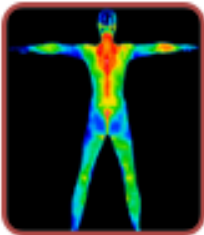
Delivery of oxygen and nutrients



Removal of waste products



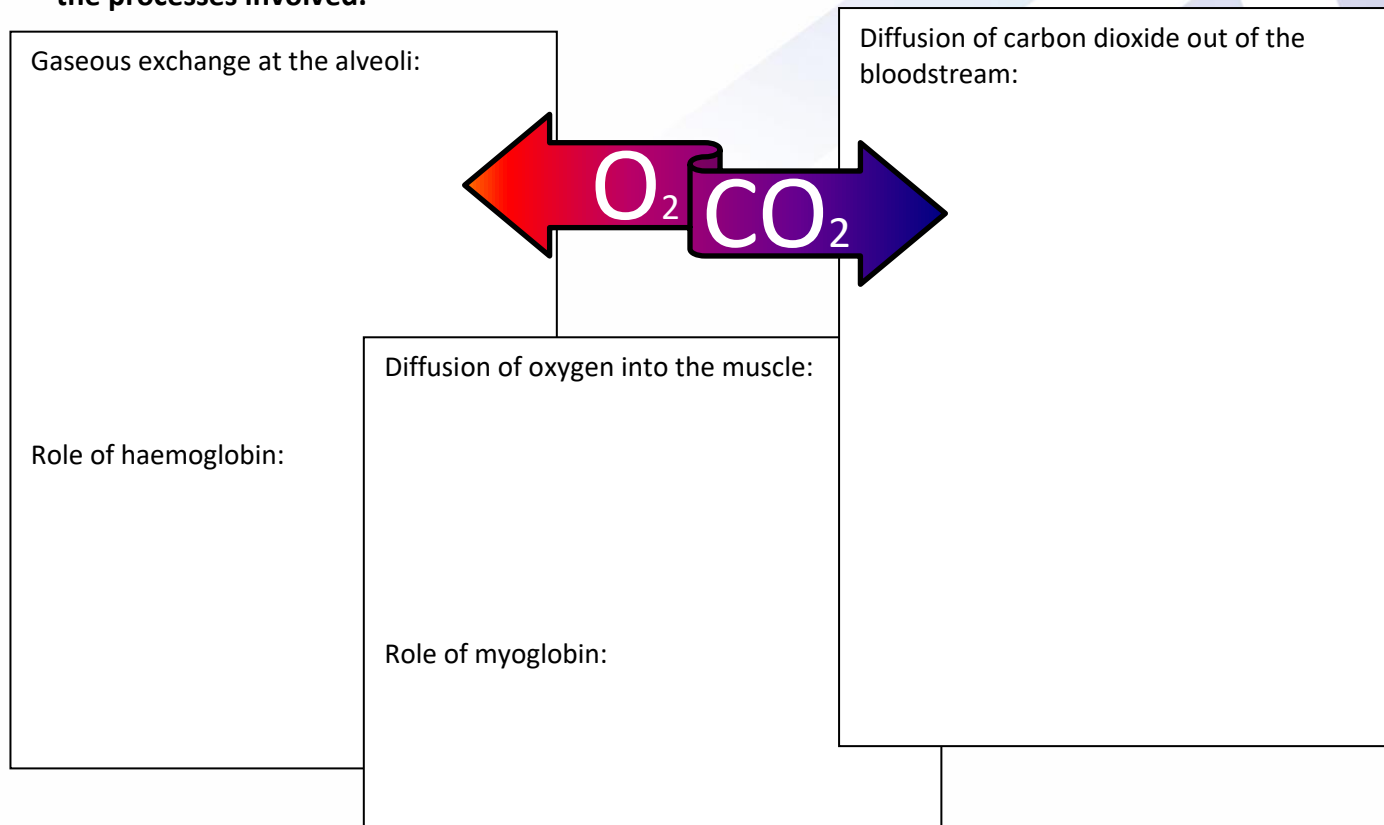
Thermoregulation : vasodilation and vasoconstriction of blood vessels



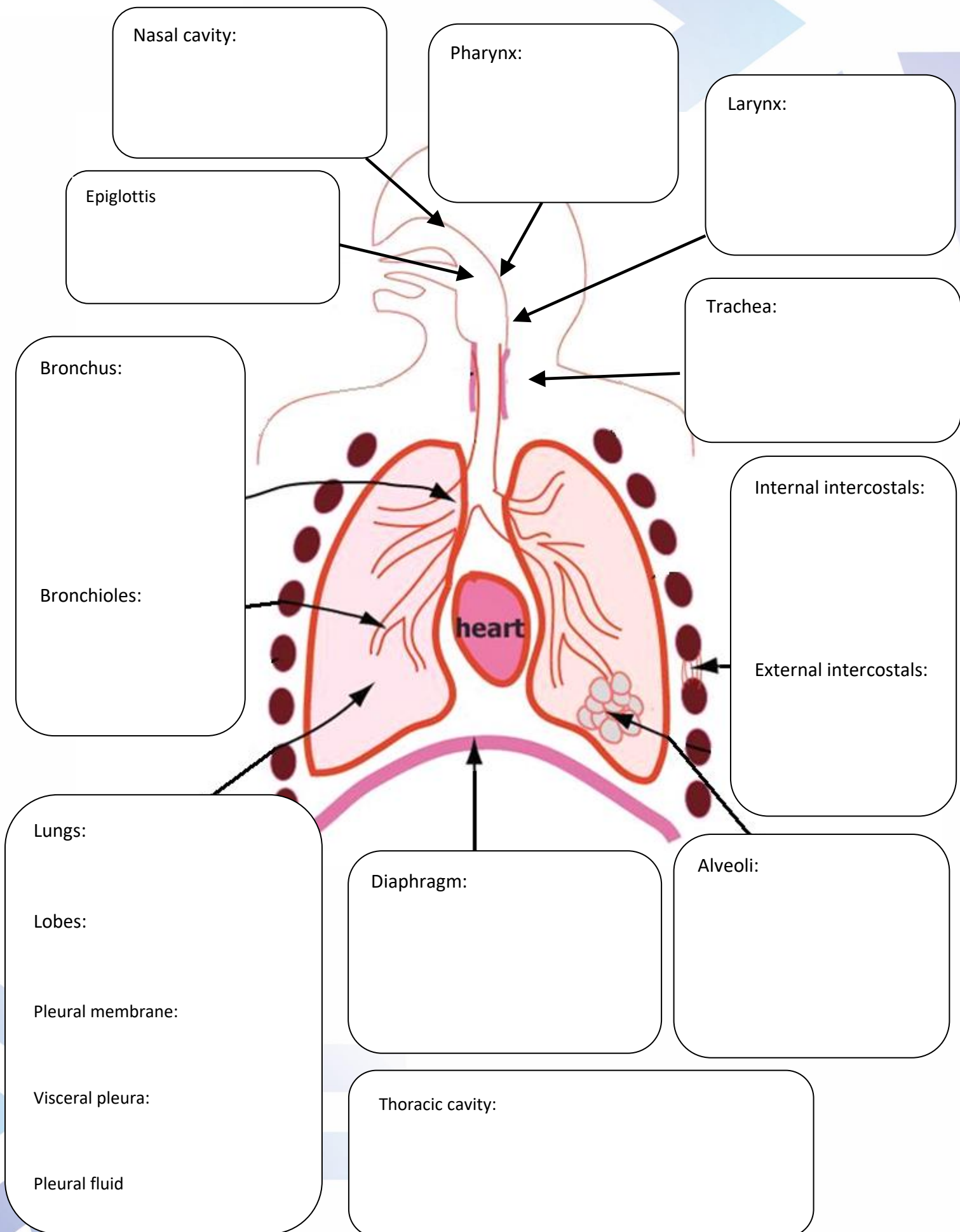


## The Respiratory System

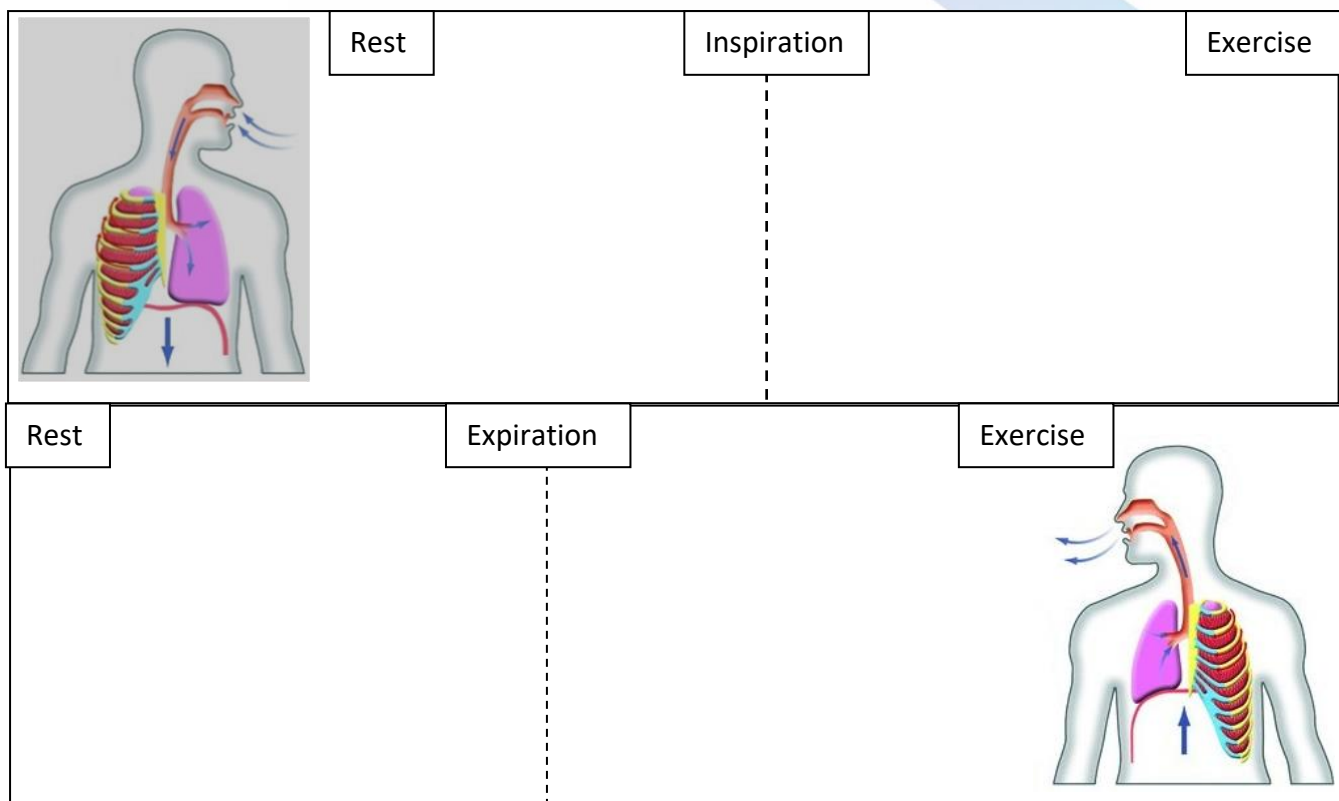
The Respiratory system has 2 main roles: diffusion of oxygen into the blood stream and diffusion of carbon dioxide out of the blood stream. **DESCRIBE these functions and EXPLAIN the processes involved.**



DESCRIBE the key structures of the respiratory system:

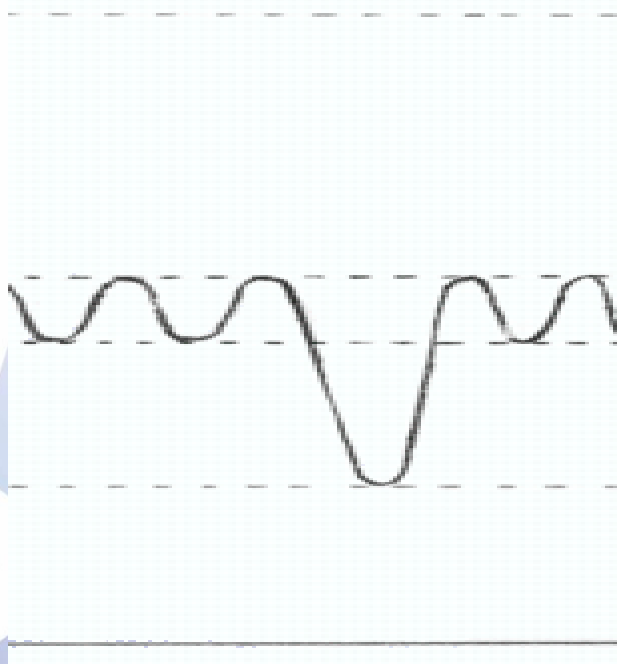


DESCRIBE the Mechanisms of breathing at rest and EXPLAIN the changes during exercise:



## Respiratory volumes

A spirometer can be used to measure different lung volumes. On the example trace below, **LABEL** and **DESCRIBE** the key volumes and capacities used to assess an individual's lung function:



Tidal volume

Inspiratory reserve volume

Expiratory reserve volume

Residual volume

Vital capacity

Total lung capacity