GCSE PE – Year 10 – Term 1 – Mr Wing.
Levers and Cardiovascular system.

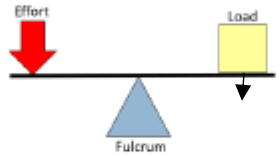
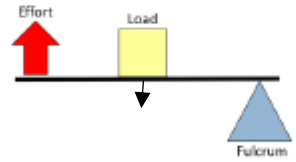
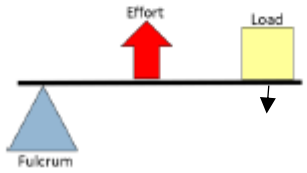
Levers

There are 3 types of lever and each has a fulcrum, load and effort. You need to be able to; draw each type of lever and give a sporting example and be able to explain mechanical advantage is. ALWAYS start by writing down:

1 – F
2 - L
3 - E

1 – F (1st class lever has the Fulcrum in the middle)
2 – L (2nd class Lever has the Load in the middle)
3 – E (3rd class lever has the effort in the middle)

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	Drawing	Example	
First class lever:			**Header in football**
Second class lever:			**Jumping in Long Jump**
Third class lever:			**Bicep curl**

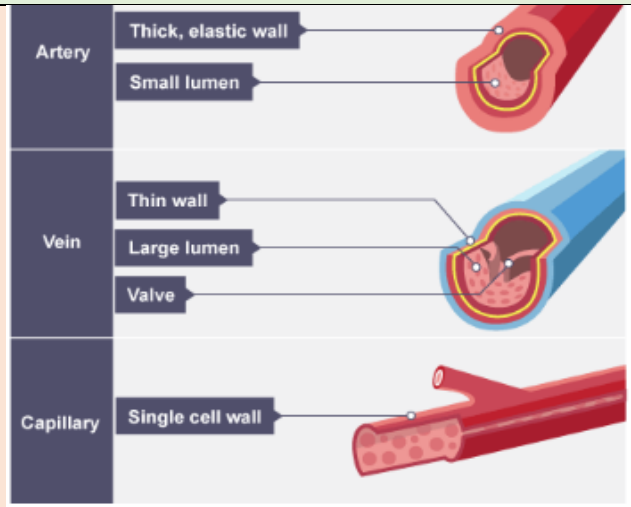
Top tip: as long as you know 1,2,3 – F,L,E you should be able to draw the diagram.

Possible Lever exam questions:

Give an sporting example of a 1st class lever (1 mark)
Give an sporting example of a 2nd class lever (1 mark)
Give an sporting example of a 3rd class lever (1 mark)
Describe the difference between a second and third class lever (4 marks)
Define mechanical advantage (1 mark)
Draw and accurately label a 1st / 2nd / 3rd class lever (1 mark each)

Introduction to the Cardiovascular system.

You need to know the difference between Arteries, Veins and Capillaries.

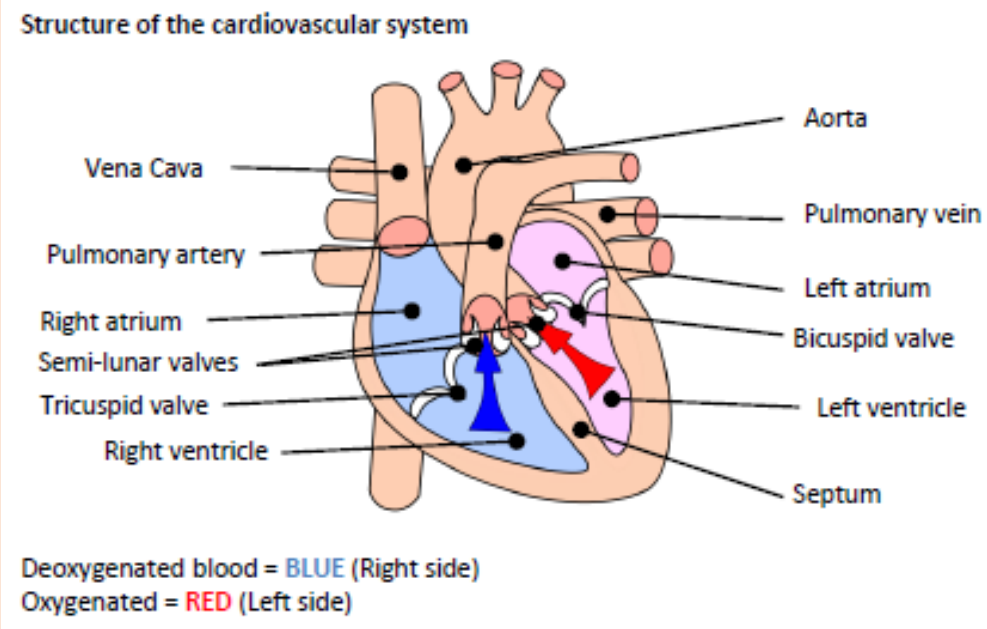


	Artery	Vein	Capillary
Function	Carry blood away from the heart (usually oxygenated blood, except for the pulmonary artery)	Carry blood towards the heart (usually deoxygenated blood, except for the pulmonary vein)	Allows diffusion of gases and nutrients from blood into the body cells
Wall	Thick, muscular	Thinner	Very thin, one cell thick
Lumen	Small	Large	Very small, only allows blood to pass through one cell at a time
Other features	Thick muscular walls to withstand blood flowing at high pressure as it leaves the heart; the largest artery is the aorta	Contain valves to prevent back flow of blood	Walls are made of semi-permeable membrane to allow transport of gases and nutrients into and out of the blood

Cardiovascular system.

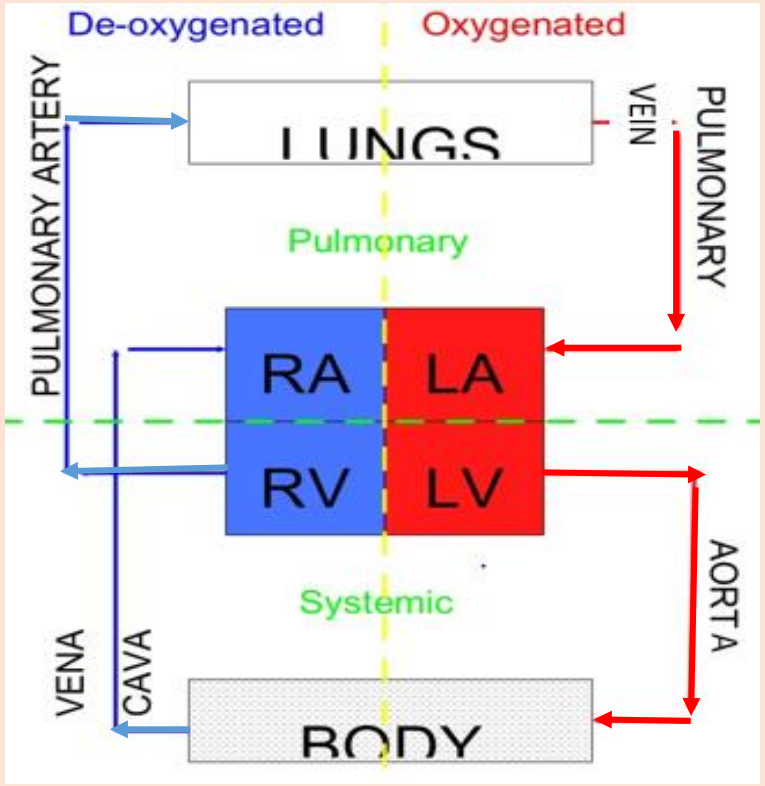
Key terms you must learn. These are important as you willl need to understand these terms in lots of different types of questions on paper 1.

Heart rate: The number of times the heart contracts in one minute.
Stroke volume: The volume of blood ejected out of the heart in one contraction.
Cardiac output: The volume of blood ejected out of the heart in one minute.



Possilbe Exam questions:
You could be given a blank version of the diagram above and asked to label it.
Describe the difference between arteries and veins. (3 marks)
Describe the role of red blood cells (1 mark)
Describe thestructure and role of cappilaries (2 marks)
Ateries carry blood under high pressure? True or False? (1 mark)
Describe the pathway of blood through the heart/body (4/5 marks)
Name the part of the heart that divides it into two halves to separate deoxygenated and oxygenated blood. (1 mark)

You should be able to draw this diagram without support:



Exam Question:
(Using your copy of the diagram you have drawn above)
Explain the pathway of blood around the body beginning at the lungs. (5 marks)

Include key words;
High/low blood pressure, oxygenated/deoxygenated blood, bicuspid and tricuspid valve, Left/Right atrium, left/right ventricle, Pulmonary vein/artery, Aorta, Vena cava, pulmonary system, systemic system, diffusion of oxygen, capillary, working muscle.