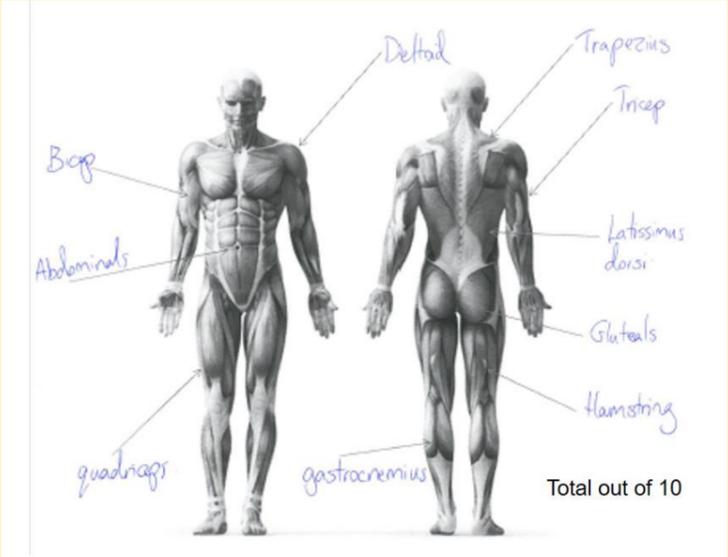


Muscular system

<p>Muscles</p> <p>Location (where they are) and role (what it does as in what movement it creates e.g. flexion) of the voluntary muscles</p>	<p>Muscle types</p> <p>Classification (the groups that different muscles fall within) and characteristics (details of how it looks or how it works) of muscle types.</p>	<p>Muscle fibre types</p> <p>Characteristics (how they work e.g. lots of force, high endurance, etc.) of muscle fibre types and how it impacts (how it effects performance) on performance</p>	<p>Antagonistic muscle action</p> <p>Know the muscles that work together to enable movement and opposing movements to occur.</p>
--	---	---	---

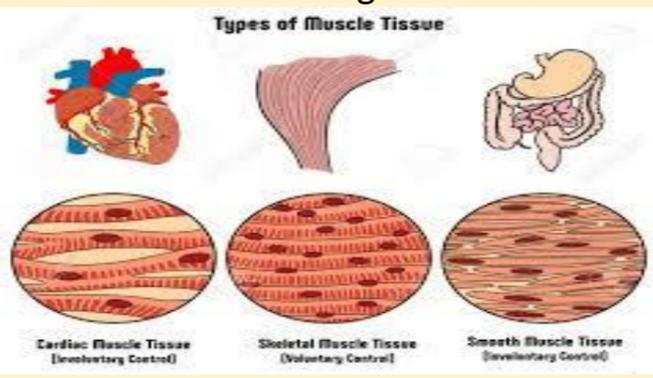
deltoid, biceps, triceps, pectoralis major, latissimus dorsi, external obliques, hip flexors, gluteus maximus, quadriceps, hamstrings, gastrocnemius and tibialis anterior



Voluntary muscles of the skeletal system,

Involuntary muscles in blood vessels,

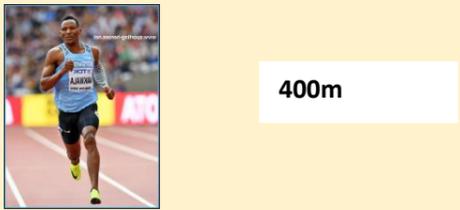
cardiac muscle forming the heart



Slow twitch muscle fibre **type I**



Fast twitch muscle fibre **type IIa**



Fast twitch muscle fibre **type IIx**



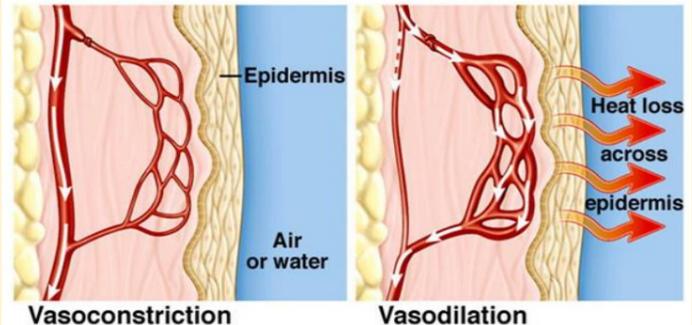
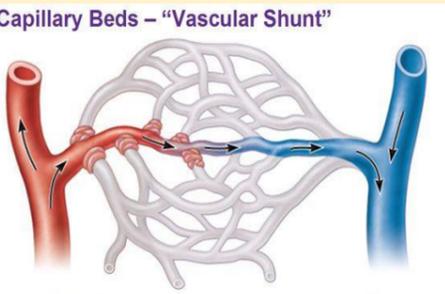
Agonist (the muscle that causes the movement) and antagonist (that muscle that relaxes to enable the movement to occur).

e.g. gastrocnemius and tibialis anterior acting at the ankle -plantar flexion to dorsiflexion; and quadriceps and hamstrings acting at the knee, biceps and triceps acting at the elbow, and hip flexors and gluteus maximus acting at the hip – all flexion to extension

- Application**
- Consider the key differences between the voluntary muscles that enable us to move our skeletons and cardiac muscle/involuntary muscle?
 - Examine how two different fibre types are used by the athletes in figure 2 during their race?
 - Examine the antagonistic muscle action taking place at the elbow and the hip in figure 2 that enables the performer to achieve this position.
 - Explain how the muscular and skeletal system work together to enable movement to occur?

The structure and functions of the cardiovascular system

<p>Functions (what does it do) of the cardiovascular system</p>	<p>Structure (where they're positioned) of the cardiovascular system</p> <p>Function (purpose. What does it do) and importance of red and white blood cells, platelets and plasma for physical activity and sport</p>	<p>Structure of arteries, capillaries and veins and role of oxygenated and deoxygenated blood and its importance to physical activity</p>	<p>Vascular shunt mechanism The mechanisms (what happens, how it works, what things make it work?) (vasoconstriction, vasodilation) and the need for redistribution of blood flow (vascular shunting) during physical activities compared to when resting</p>
--	--	--	---

<p>Transportation of oxygen, carbon dioxide and nutrients</p> <p>Clotting of open wounds and fighting infection</p> <p>Temperature regulation</p> <p>TCT</p>  <p>Build → Functions of the CV System Temperature regulation</p> 	<p>atria, ventricles ,septum, tricuspid, bicuspid and semi-lunar valves, aorta, vena cava, pulmonary artery, pulmonary vein</p> <p>Red blood cells = carry oxygen to the working muscles (performance)</p> <p>White blood cells = fight off infections (health)</p> <p>Platelets = help blood to clot (health)</p> <p>Plasma = the liquid in which the other cells are suspended (carried) giving it its liquid form.</p>	<p>Veins carry blood back to the heart, carry deoxygenated, Blood pressure is low, Thin walls and large lumens, They have one way pocket valves</p> <p>Arteries carry blood away from the heart to the muscles and organs, they carry oxygenated blood, blood pressure is high, they have thick muscular walls and small lumens.</p> <p>Capillaries link blood vessels between arteries and veins, they're the smallest blood vessel, they're very narrow, blood has to travel through one at a time, Gaseous exchange takes place through the walls of the capillaries (one cell thick), Blood becomes deoxygenated at the muscles, Blood becomes oxygenated at the lungs</p>	<p>The vascular shunt mechanism is how your body redistributes blood to where its needed most when exercising (muscles) instead of sending it to inactive parts of the body (e.g. digestive system).</p>  <p>Capillary Beds – "Vascular Shunt"</p> <p><small>Terminal arteriole</small> <small>Postcapillary venule</small></p> <p><small>(b) Sphincters closed (sympathetic stimulation)—blood flows straight through Metarteriole Thoroughfare Channel and bypasses the true capillaries, "shunting" blood away from this area of tissue.</small></p> <p>Vasodilation - Increasing/opening/widening of the artery/capillary/blood vessel itself.</p> <p>Vasoconstriction - Decreasing/closing the lumen of the artery/capillary/blood vessel itself</p>
--	---	---	--

- Application**
- Explain two functions of the cardiovascular system that enable the long distance cyclist to perform well during their race?
 - Describe the route that the blood takes through circulatory system?
 - Explain how the respiratory system and the cardiovascular system work together to provide the body with oxygen so that an endurance athlete of your choice can compete?