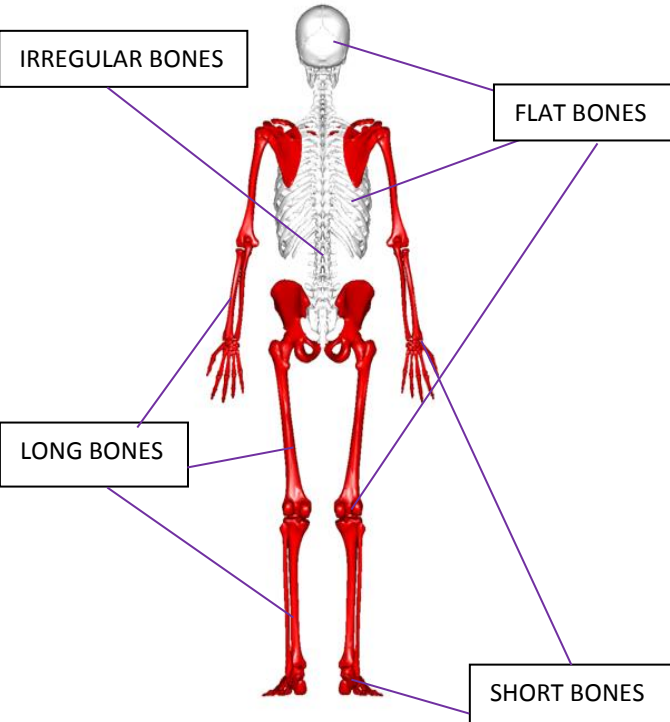


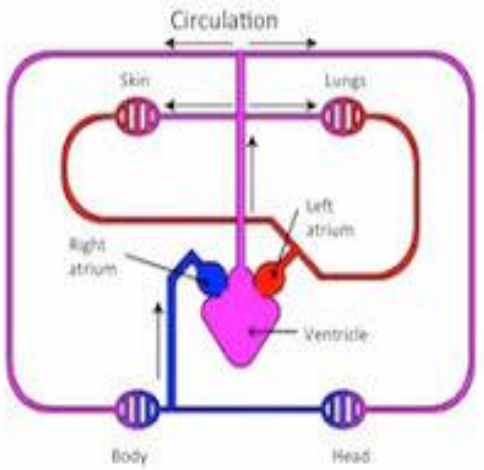
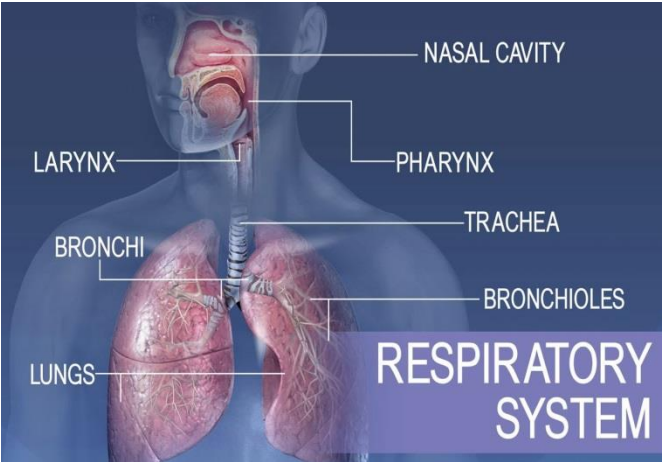
PHYSICAL EDUCATION – Year 9, Term 1 – FITNESS AND THE BODY SYSTEMS

WORKING TOWARDS THE EXAM

BODY SYSTEMS	THE SKELETAL SYSTEM	THE MUSCULAR SYSTEM
<p>ANATOMY – the bodily structure of humans and animals.</p> <p>PHYSIOLOGY – how the whole body or a body part functions.</p>	<p>All bones are formed from cartilage & are hardened into bone by calcium & other minerals.</p> <p>Bones stop growing in length generally between the ages of 16–18.</p> <p>Long bones – longer than they are wide – femur/radius.</p> <p>Short bones – roughly the same size in length, width & thickness – wrist & ankle.</p> <p>Flat bones – or plates, usually protect organs – ribs/knee cap.</p> <p>Irregular bones – odd shapes & perform a range of functions.</p>	<p>There are 3 types of muscle in the body:</p> <p>Voluntary – muscles under your control.</p> <p>Involuntary – muscles that are not under your control. They contract & relax automatically, working all the time to keep you alive. Muscles found in organs in the digestive, circulatory and urinary systems.</p> <p>Cardiac – found only in the walls of the heart.</p>
<p>The SKELETAL SYSTEM – is basically all the bones of the skeleton, from the cranium in the skull to the bones that make up the foot</p> <p>The MUSCULAR SYSTEM – all the muscles of the body that help us move and perform daily functions.</p> <p>The CARDIOVASCULAR SYSTEM – how the heart, blood and blood vessels work together to supply the body with oxygen.</p> <p>The RESPIRATORY SYSTEM – the system of organs & vessels that gets oxygen to and then removes carbon dioxide from the cardiovascular system.</p>	 <p>The diagram shows a human skeleton with four callout boxes: 'IRREGULAR BONES' pointing to the skull, 'FLAT BONES' pointing to the ribs, 'LONG BONES' pointing to the femur, and 'SHORT BONES' pointing to the wrist bones.</p>	<p style="text-align: center;">THE VOLUNTARY MUSCULAR SYSTEM</p> <p>The muscular system is all the muscles in the body & the way they work together.</p> <p>The voluntary muscular system is the main driving force behind movement, which happens because of muscles contracting (shortening) and lengthening.</p> <p>Muscles also define your body shape and help to maintain posture.</p> <p>The voluntary muscular system is crucial when you are exercising or playing sport.</p> <p>You can train them to become bigger and stronger and to work for longer without getting tired.</p> <p>Antagonistic pairs – When a muscle contracts (shortens) it pulls on a bone & produces movement in one direction. However, muscles cannot push. So a second muscle is needed to pull the bone the other way.</p>

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THE CARDIOVASCULAR SYSTEM	THE RESPIRATORY SYSTEM	BODY SYSTEMS AND SPORTING PERFORMANCE
 <p>The diagram illustrates the circulation of blood. It shows a central heart with four chambers: the right atrium and ventricle on the left, and the left atrium and ventricle on the right. Blood flows from the body and head to the right atrium, then to the right ventricle, which pumps it to the lungs. From the lungs, it returns to the left atrium, then to the left ventricle, which pumps it back to the body and head. The skin is also shown as a site of circulation.</p>	 <p>The diagram shows the human respiratory system. Air enters through the nasal cavity and mouth into the pharynx, then down the trachea. The trachea branches into bronchi, which further divide into bronchioles, leading to the lungs. Labels include: NASAL CAVITY, PHARYNX, TRACHEA, BRONCHI, BRONCHIOLES, LARYNX, and LUNGS. The text 'RESPIRATORY SYSTEM' is written in large letters at the bottom right of the diagram.</p>	<p>When we start exercising or playing sport the 4 body systems work together to help our sporting performance.</p> <ol style="list-style-type: none"> 1. The muscles contract and relax causing the bones of the skeletal system to move. 2. The muscles require energy (from glucose & oxygen) to work so the respiratory system increases the breathing rate to get more air into the lungs. 3. Because there is more air in the lungs the alveoli can transfer more oxygen into the cardio-vascular system to be pumped around the body by the heart to the working muscles.
<p>The cardio-vascular system Includes the heart, blood and blood vessels.</p> <p>Cardio = the heart.</p> <p>Vascular = blood vessels</p> <p>The cardio-vascular system has 3 important functions:</p> <ol style="list-style-type: none"> 1. It transports oxygen, carbon dioxide & nutrients. 2. It helps the blood clot. 3. It controls the body temperature <p>The blood travels from the lungs to the heart carrying oxygen.</p> <p>The heart then pumps the oxygen rich blood to the body where the oxygen is used to produce energy.</p> <p>The blood returns to the heart carrying more carbon dioxide & less oxygen.</p> <p>The heart then pumps this blood to the lungs where the carbon dioxide is taken in to the respiratory system.</p>	<p>Every tissue in the body needs oxygen to function. The respiratory system has 2 main functions:</p> <ol style="list-style-type: none"> 1. To get oxygen into the body. 2. To remove carbon dioxide from the body. <p>When we breathe in air travels through the trachea into the bronchi then the bronchioles before arriving at the alveoli where oxygen passes into the blood to be transported around the body by the cardio-vascular system.</p> <p>Carbon dioxide passes from the blood through the alveoli into the bronchioles, bronchi and trachea to be breathed out of the body.</p>	<ol style="list-style-type: none"> 4. As we continue working for a longer period the working muscles require more oxygen to produce energy to keep us moving. 5. The respiratory system needs to supply the cardio-vascular system with more oxygen so the breathing rate increases again. 6. When we work for too long a time or too hard the respiratory system cannot get enough oxygen to the cardio-vascular system. Therefore, the cardio-vascular system cannot supply the working muscles with enough oxygen for them to produce energy to move the bones quickly. 7. Because of this, our performance gets worse or we have to stop exercising.

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