

YEAR 7 | Science | Human Body

What was William Harvey's famous discovery in the human body?	The circulation of the blood.	How does the body obtain oxygen more quickly during exercise?	Breathing rate increases	From which chamber does blood leave the heart and travel to the lungs?	Right ventricle
What gas in the air do we need to breathe in to survive?	Oxygen	Which part of the respiratory system is also known as the windpipe?	Trachea	From which chamber does blood leave the heart and travel to the body?	Left ventricle
What gases do we breathe out into the air?	Carbon dioxide + water vapour	Which part of the respiratory system is biggest: bronchus, bronchiole, alveolus?	Bronchus	To which chamber does blood arrive at the heart from the lungs?	Left atrium
Name a chemical reaction outside the body that requires oxygen. (Hint: consider the candle inside a jar.)	Burning / combustion	Which part of the respiratory system is smallest: bronchus, bronchiole, alveolus?	Alveolus	To which chamber does blood arrive at the heart from the body?	Right atrium
What is the name given to the chemical reaction that takes place inside our body that requires oxygen?	Respiration [or aerobic respiration]	In which part of the respiratory system does gas exchange take place?	Alveoli	Through which blood vessel does blood arrive at the heart from the body?	Vena cava
How many times does blood pass through the heart when it circulates the body?	Twice	True or false: when we breathe in, our lungs expand, which causes the ribcage to move outwards.	False: our ribcage moves outwards, which causes our lungs to expand.	Through which blood vessel does blood leave the heart and travel to the lungs?	Pulmonary artery
Besides oxygen, what other substance is required for respiration?	Glucose	What is breathing in also known as?	Inhalation	Through which blood vessel does blood leave the heart and travel to the body?	Aorta
What are the reactants required for aerobic respiration to occur?	Oxygen + glucose	What is breathing out also known as?	Exhalation	Through which blood vessel does blood leave the lungs and travel to the heart?	Pulmonary vein
What are the products of aerobic respiration?	Carbon dioxide + water	What is the name of the muscles between the ribs?	Intercostal muscles	Which chamber has thicker walls: left ventricle or right ventricle?	Left ventricle
Write down a chemical word equation for aerobic respiration.	Oxygen + glucose -> carbon dioxide + water	During inhalation, do the intercostal muscles contract or relax?	Contract	Through which blood vessel does oxygenated blood arrive at the heart?	Pulmonary vein
Respiration is exothermic. Does this mean it releases energy or requires energy?	Releases energy	True or false: during inhalation, the pressure inside and outside the lungs is always equal.	False: the pressure inside the lungs is lower than the pressure outside the lungs, which causes air to move into the lungs.	Through which blood vessel does deoxygenated blood arrive at the heart?	Vena cava
What liquid carries oxygen, glucose, carbon dioxide and other substances around our bodies?	Blood	What is the process by which oxygen moves from the air into the blood in the alveoli	Diffusion	Through which blood vessel does oxygenated blood leave the heart?	Aorta
If we do exercise, our muscles need more energy to move. What must our muscle cells do more of to release this energy?	Muscle cells must respire more / faster	Write down any of the features of the alveoli that help them carry out gas exchange more effectively.	Thin walls (only one cell thick), large surface area, lots of capillaries surrounding each alveolus.	Through which blood vessel does deoxygenated blood leave the heart?	Pulmonary artery
For respiration to happen faster, what must be supplied to the body's cells more quickly?	Oxygen and glucose	What diffuses from the blood into the air during gas exchange?	Carbon dioxide	Which blood vessels are the smallest: arteries, veins, capillaries?	Capillaries
How does the body supply oxygen and glucose to the cells more quickly?	Heart rate increases, pumping more blood to the cells every minute	How many chambers does the heart have?	Four	Which blood vessels carry blood towards the heart: arteries, veins, capillaries?	Veins

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Which blood vessels carry blood away from the heart: arteries, veins, capillaries?	Arteries	True or false: the stomach contains an alkaline substance.	False: the stomach contains hydrochloric acid.	Which organelle contains DNA?	Nucleus
Which blood vessels have the thickest walls: arteries, veins, capillaries?	Arteries	Which part of the body produces bile, which neutralises stomach acid?	Liver	Which organelle controls which substances move into and out of cells?	Cell membrane
Which blood vessels have the thinnest walls: arteries, veins, capillaries?	Capillaries	Which part of the digestive system contains villi?	Small intestine	Which organelle build proteins?	Ribosome
Which blood vessels have the largest lumens: arteries, veins, capillaries?	Veins	Write down any features of the villi that help them carry out their function. Write down the following in order of largest to smallest: cell, organ, tissue, organism, organ system, organelle	Large surface area, thin walls (one cell thick), lots of capillaries	Where are blood cells produced: heart, lungs, bone marrow?	Bone marrow
Through the walls of which blood vessels does diffusion take place: arteries, veins, capillaries?	Capillaries		Organism, organ system, organ, tissue, cell, organelle	What do we call the place where two bones meet?	Joint
Name the 4 main components of blood.	Red blood cells, white blood cells, platelets, plasma	What name is given to a group of cells that combine to carry out a specific function?	Tissue	What is the largest, strongest bone in the human body?	Femur
	Which component of the blood helps fight infections?	White blood cells	Which organ system is where gas exchange takes place?	Which type of joint is the shoulder: pivot, hinge or ball and socket?	Ball and socket
Which component of the blood transports oxygen?	Red blood cells	Which organ system is responsible for transporting substances around the body?	Respiratory system	Which type of joint is the elbow: pivot, hinge or ball and socket?	Hinge
Write down any of the features of red blood cells that help them carry out their function.	Biconcave shape, no nucleus, large surface area, contain haemoglobin	Which organ system breaks down food?	Circulatory system	Which type of joint is the wrist: pivot, hinge or ball and socket?	Pivot
	Which part of the mouth carries out mechanical digestion?	Teeth	Which organ system supports the body, protects organs and enables movement?	What connects bones to other bones: tendons, glands, ligaments?	Ligaments
Which part of the mouth carries out chemical digestion?		Saliva (amylase enzyme)	Which organ has special tissues to allow it to absorb glucose into the blood?	What connects bones to muscles: tendons, glands, ligaments?	Tendons
Which tube does food travel through after it is swallowed?	Oesophagus	Which organ is responsible for gas exchange?	Digestive system	What is the name given to respiration without oxygen?	Anaerobic respiration
	Which part of the digestive system absorbs water from food?	Large intestine	Which organ pumps blood around the body?	Skeletal system	False: aerobic respiration releases more energy than anaerobic respiration.
Which part of the digestive system breaks food down further with its thick muscle walls and enzymes?		Stomach	What is the name given to the structures inside cells?	Small intestine	
Which part of the digestive system absorbs glucose from food?	Small intestine	Which organelle is where respiration happens?	Lungs	True or false: anaerobic respiration releases more energy than aerobic respiration.	Lactic acid
			Heart		