Gas exchange		
26	Gas exchange	the transfer of gases between an organism and its environment
27	Lung structure	air travels via the trachea → bronchi → alveoli (air sacs)
28	Trachea	tube that transports air to and from the lungs
29	Bronchi	tubes in lungs that transfer air between the trachea and alveoli
30	Alveoli	air sacs surrounded by a network of capillaries. oxygen and carbon dioxide diffuse between the alveoli and capillaries
31	Intercostal muscles	muscles between the ribs which contract and relax during breathing
32	Diaphragm	major muscle of breathing, located below the lungs
33	Inhalation	the act of breathing in
34	Exhalation	the act of breathing out
Respiration		
35	Respiration	a continuously occurring reaction in cells that supplies all the energy needed for metabolism
36	Aerobic Respiration equation	glucose + oxygen → carbon dioxide + water $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$
37	Respiration is exothermic	respiration is an **exothermic** reaction: energy is transferred from the reaction, to the **cytoplasm**
38	Aerobic respiration	respiration with oxygen energy is released
39	Anaerobic respiration	respiration without oxygen less energy is released
	a) in muscles	glucose → lactic acid
	b) in plants	glucose → ethanol + carbon dioxide
	c) in yeast cells	glucose → ethanol + carbon dioxide
40	Fermentation	anaerobic respiration in yeast cells

The heart and circulatory system		
41	The heart	a muscular organ that pumps blood around the body
42	Atrium	the upper chamber at the top of the heart on each side of the heart
43	Ventricle	the lower chamber on each side of the heart
44	Artery	a muscular tube that carries blood **away** from the heart
45	Aorta	the main artery distributing oxygenated blood through the body
46	Pulmonary artery	the artery carrying deoxygenated blood back to the lungs
47	Vein	a thinner tube that carries blood back to the heart, contains valves
48	Vena Cava	the main vein carrying deoxygenated blood back to the heart
49	Pulmonary vein	the vein carrying oxygenated blood from the lungs to the heart
50	Coronary arteries	the arteries that supply blood to the heart muscle itself
51	Capillaries	network of narrow blood vessels that connect the arteries and veins. 1 cell thick allowing substances to **diffuse** in and out
52	Blood	a tissue made of plasma, red and white blood cells and platelets
53	Plasma	>90% water. carries substances around the body, including CO_2
54	Red Blood Cells	bi-concave shape = large surface area carries oxygen around the body in haemoglobin do not have a nucleus