

# YEAR 11 – AUTUMN BIOLOGY

## KNOWLEDGE ORGANISER

### **B5.1 How do substances get into, out of and around our bodies?**

B5.1.1 describe some of the substances transported into and out of the human body in terms of the requirements of cells, including oxygen, carbon dioxide, water, dissolved food molecules and urea

B5.1.2 explain how the partially-permeable cell membranes of animal cells are related to diffusion, osmosis and active transport

B5.1.3 describe the human circulatory system, including its relationships with the gaseous exchange system, the digestive system and the excretory system

B5.1.4 explain how the structure of the heart is adapted to its function, including cardiac muscle, chambers and valves

B5.1.5 explain how the structures of arteries, veins and capillaries are adapted to their functions, including differences in the vessel walls and the presence of valves

B5.1.6 explain how red blood cells and plasma are adapted to their functions in the blood

B5.1.7 explain the need for exchange surfaces and a transport system in multicellular organisms in terms of surface area:volume ratio

B5.1.8 calculate surface area:volume ratios M1c

For a more in-depth version plus resources, go to –

<https://ocr.org.uk/qualifications/gcse-twenty-first-century-science-suite-biology-b-j257-from-2016/delivery-guide/topic-gbb005-b5-the-human-body-staying-alive/delivery-guide-gbbdg019-b51-how-do-substances-get-into-out-of-and-around-our-bodies>