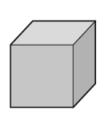
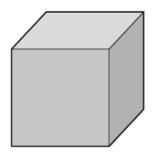
Exchange surfaces – 2021/20 GCE AS Biology A

1. Nov/2020/Paper_H020/2/No.6

(a) The cubes shown in Fig. 6.1 represent two different sized animals.





Small multicellular animal Volume = 8 cm^3 Surface area = 24 cm^2 Large multicellular animal Volume = 64 cm^3 Surface area = 96 cm^2



Explain how Fig. 6.1 demonstrates the need for larger multicellular animals to have specialised exchange surfaces.

 	[2]

(b)* Fig. 6.2 and Fig. 6.3, on the insert, show images of exchange surfaces in a bony fish and an insect.

With reference to both Fig. 6.2 and Fig. 6.3 and your own knowledge, outline how the respiratory systems in a bony fish and in an insect are adapted to maximise ventilation and gaseous exchange.

[6]