

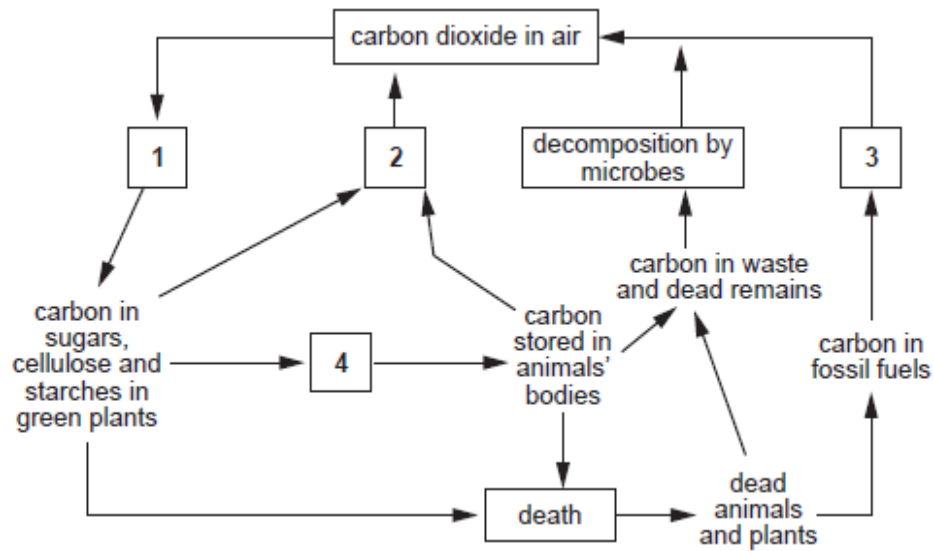
**GCSE Biology A (Gateway)**

**J247/04 Biology A B4-B6 and B7 (Higher Tier)**

**Question Set: 17**

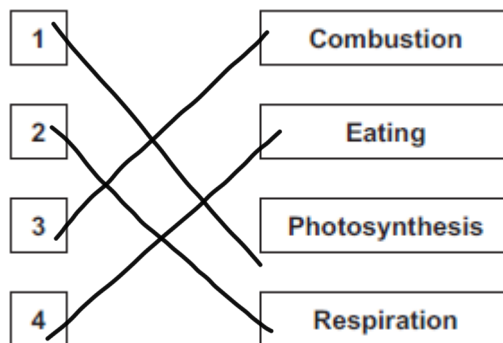
1

The diagram shows the carbon cycle.



Boxes 1–4 represent different processes in the carbon cycle.

Draw lines to link boxes 1–4 to the correct name for the process in the carbon cycle.



[2]

(b) Scientists investigated if crops could be grown on the planet Mars.

They used a soil that was similar to the soil found on Mars. The soil contained some minerals but no living organisms.

(i) The scientists managed to grow crops in the soil. However, on Mars, the minerals in the soil would soon run out.

Explain why.

[2]

The living organisms are needed to replenish minerals in the soil, completing the carbon & nitrogen cycle to provide minerals required by plants for growth, constantly

- (ii) Living organisms could be added to the soil but there is no air on Mars. The plants would need to be grown in an enclosed structure.

At first, air would need to be added, but after a while the organisms in the soil and the plants would supply each other with the gases they need.

Explain how this would happen.

[2]  
The plants uptake  $\text{CO}_2$  & release  $\text{O}_2$  for photosynthesis and organisms uptake  $\text{O}_2$  & release  $\text{CO}_2$  for respiration so can exchange these gases when they are released.

**Total Marks for Question Set 17: 6**

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