

Diffusion of "Food" Molecules

Q1 **Match** each nutrient to the molecules it forms when digested:

starch is digested to form ...

... smaller molecules called fatty acids and glycerol

protein is digested to form ...

... smaller molecules called sugars

fat is digested to form ...

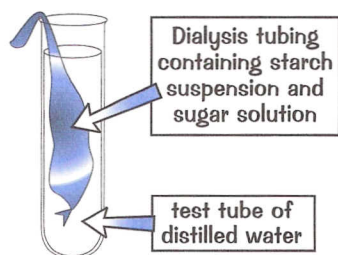
... smaller molecules called amino acids

Q2 The products of digestion are absorbed into the bloodstream.

- In **which** part of the digestive system does this happen?
- Explain how the **structure** of the organ you gave for part a) allows for the efficient movement of the products of digestion through its wall.
- By what process are molecules absorbed into the bloodstream if there is already a **high concentration** of nutrients in the blood?

Q3 A student did an experiment to show the movement of nutrients through the wall of a model intestine.

She made a watertight bag using dialysis tubing, which is partially permeable. She put a mixture of starch suspension and sugar solution into the bag, and put the bag into a test tube containing distilled water (see diagram). At the beginning of the experiment she tested the contents of the bag, and the water for starch and sugar. She did this again after 30 minutes. Her **results** are shown in the table.



time (minutes)	contents of bag		water	
	starch	sugar	starch	sugar
0	✓	✓	✗	✗
30	✓	✓	✗	✓

- How** did sugar get into the test tube of water during the experiment?
- Why** was there no starch in the water at the end of the experiment?
- Suggest **three** ways that the student could speed up the process described in your answer to part a).