



Active Transport Comprehension Questions

1. Define active transport.

Tick **one** box.

The diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane.

The process of moving substances across membranes, from a more dilute solution to a more concentrated solution, against a concentration gradient.

The spreading out of particles resulting in a net movement from an area of higher concentration to an area of lower concentration.

2. Name **one** place active transport is important in animals.

3. Name **one** place active transport is important in plants.

4. Describe how cells release the energy required for active transport.

5. Describe **one** way villi are adapted for active transport.

6. Place the following steps in the correct order to describe how glucose is transported from the small intestine into the bloodstream.

order	
	The concentration of glucose in the small intestine and in the bloodstream are the same.
	Glucose is transported from the small intestine into the bloodstream via active transport, this requires energy.
	Glucose moves by diffusion from the small intestine into the bloodstream.
	Food is digested in the small intestine.
	There is a higher concentration of glucose in the small intestine than in the bloodstream.



7. Explain why it is important all the glucose is transported from the small intestine into the bloodstream.

8. Explain why nitrate ions are transported from the soil into the root hair cell by active transport and **not** by diffusion.





Active Transport **Comprehension** Answers

1. Define active transport.

Tick **one** box.

The diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane.

The process of moving substances across membranes, from a more dilute solution to a more concentrated solution, against a concentration gradient.

The spreading out of particles resulting in a net movement from an area of higher concentration to an area of lower concentration.

2. Name **one** place active transport is important in animals.

villi/cells lining the small intestine

3. Name **one** place active transport is important in plants.

root hair cells

4. Describe how cells release the energy required for active transport.

The energy is released by mitochondria during respiration.

5. Describe **one** way villi are adapted for active transport.

They have a large surface area.

6. Place the following steps in the correct order to describe how glucose is transported from the small intestine into the bloodstream.

order	
4	The concentration of glucose in the small intestine and in the bloodstream are the same.
5	Glucose is transported from the small intestine into the bloodstream via active transport, this requires energy.
3	Glucose moves by diffusion from the small intestine into the bloodstream.
1	Food is digested in the small intestine.
2	There is a higher concentration of glucose in the small intestine than in the bloodstream.

7. Explain why it is important all the glucose is transported from the small intestine into the bloodstream.

The glucose is needed for cell respiration.

8. Explain why nitrate ions are transported from the soil into the root hair cell by active transport and **not** by diffusion.

Most mineral ions such as nitrate ions occur in ground soil in low concentrations. This means plants cannot rely on mineral ions moving into the plant cells by diffusion.

The ions must be transported against the concentration gradient. This needs energy and so are transferred by active transport.

