

GCSE Biology A (Gateway)

J247/01 B1-B3 and B7 Foundation (Foundation Tier)

Question Set 7

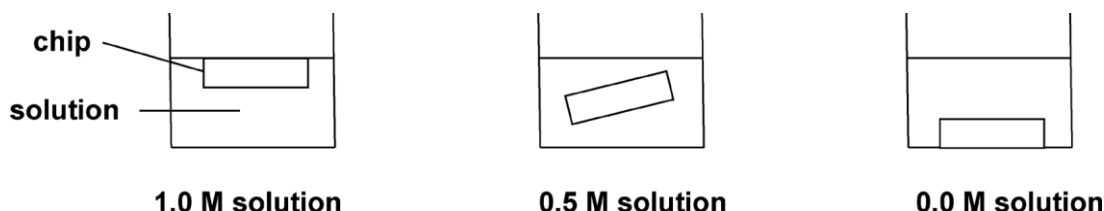
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A student investigates how different concentrations of sucrose solutions affect potatoes.

Three chips are cut from potato.

Each chip is 5.0 cm long.

Each chip is left in a different concentration of sucrose solution for two hours.



These are the results.

Concentration of sucrose solution	Length of potato chip	
	Start (cm)	After two hours (cm)
1.0 M	5.0	4.5
0.5 M	5.0	5.0
0.0 M	5.0	5.5

- (a) What process causes some of the chips to change length in this experiment?

[1]

Osmosis

- (b) Explain why the length of the chip increases in the 0.0 M solution.

[2]

This chip absorbed water via osmosis because of the higher water potential in the sucrose solution. The water travelled down the concentration gradient from an area of higher water potential to an area of lower water potential.

- (c) Explain why the length of the chip stays the same in the 0.5 M solution.

[2]

The chip has the same water potential as the solution so no net water loss or gain via osmosis.

Total Marks for Question Set 7: 5



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