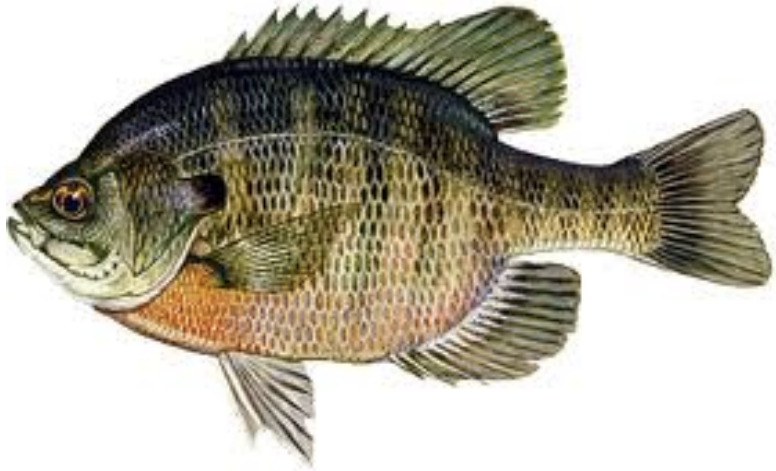
Topic	Osmosis	**Level**	GCSE (or any other course for students aged 14-16)
Outcomes	Students apply their understanding of osmosis to explain different adaptations in marine and freshwater organisms		

Problem number	An explanation of the osmotic problem faced by the organism.	How do you think the adaption or treatment works?
Example	*Water will move into the plant cells from a high water concentration in the pond to a lower water concentration in the plant cells. This could cause the cells to burst.*	*The very thick cellulose cell walls prevent the plant cells from bursting.*
1		
2		
3		
4		
5		

Example

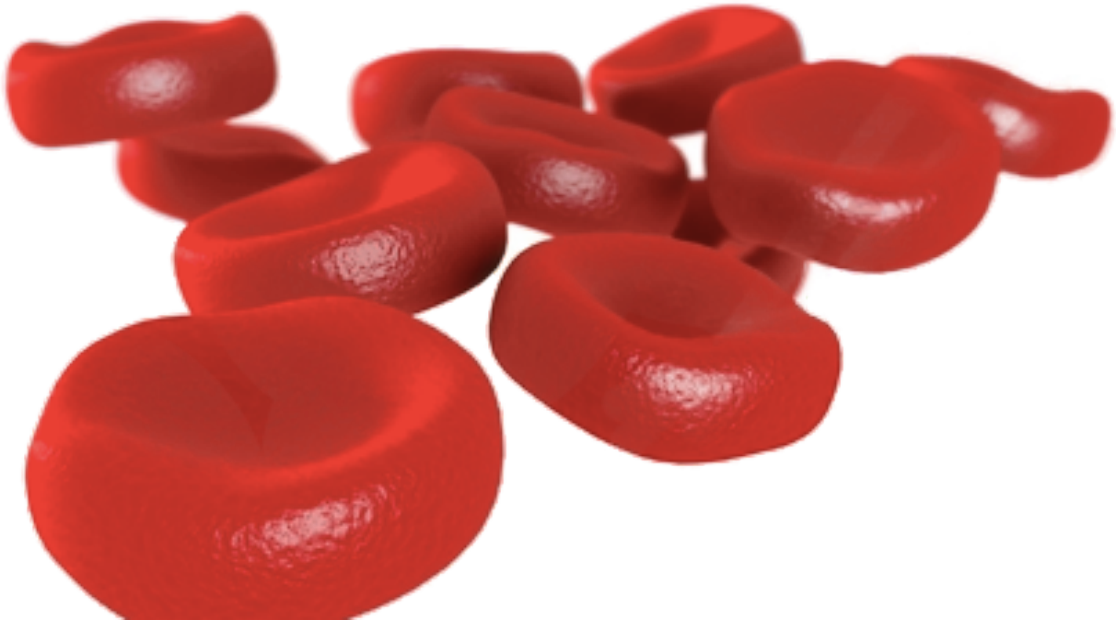
Some water plants in freshwater ponds have very thick cell walls.

Problem 1



Fresh water fish have kidneys with many large glomeruli.

Problem 2

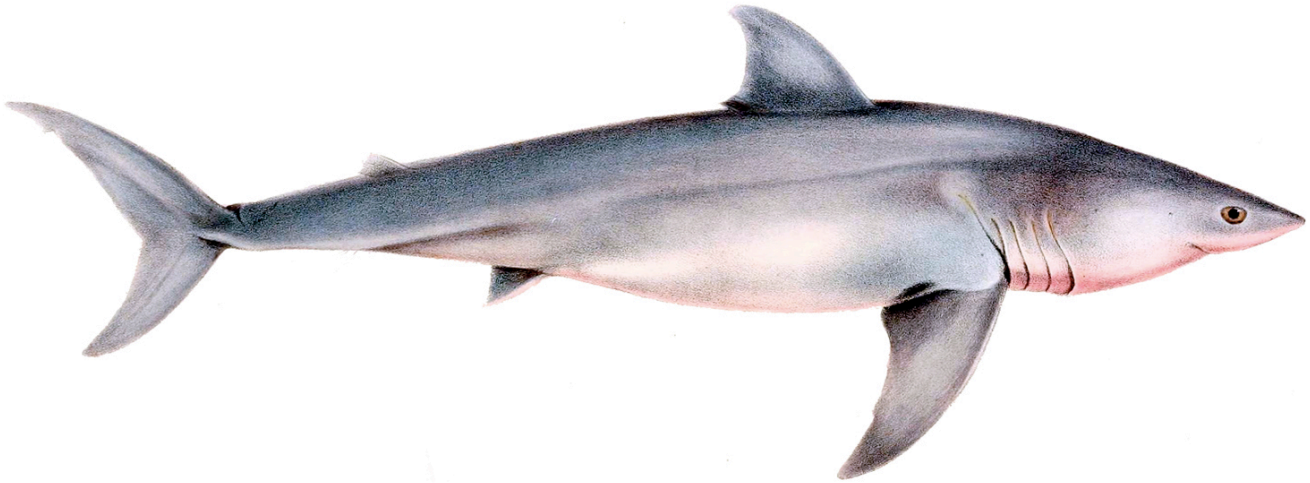


Intravenous drugs given to patients are suspended in a saline solution and not water before they are injected.

Problem 3

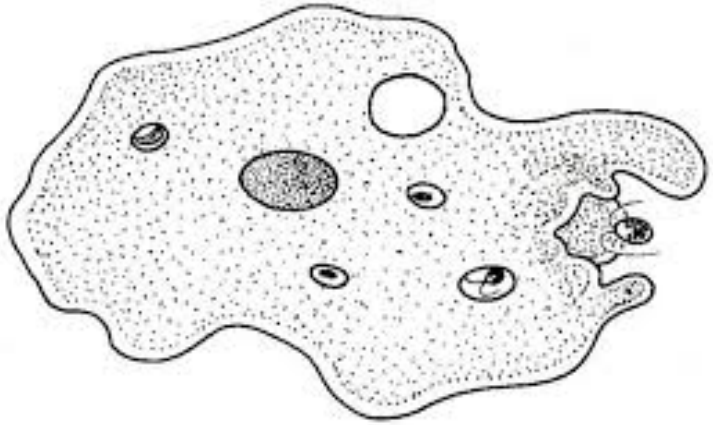
If you have diarrhoea you can sometimes be prescribed Oral Rehydration Therapy by your doctor. This therapy is a drink that contains three ingredients — salts, sugars and water.

Problem 4



Marine sharks produce and retain a huge amount of a chemical called urea in their blood; it is one of the soluble wastes that animals normally get rid of.

Problem 5



Amoeba are single celled organisms that can live in freshwater, their cells have large contractile vacuoles.