Potable water: Worksheet 10.2.2

Supply and demand for potable water

1. You are researching two different methods used to produce potable water from sea (or salty) water – distillation and reverse osmosis. You are working in pairs. Decide who is researching distillation and who is researching reverse osmosis. Use the questions below to guide *your* research.

 a. Where and why is the method used?

 b. How does it work?

 c. What are the benefits and drawbacks of the method?

 d. Are there any by-products from the process?

 e. How does the composition of the water produced compare with that of potable water produced from filtered and disinfected groundwater?

2. This was the headline to an article in a popular newspaper a few years ago:

***Water demand will outstrip supply by 40% within 20 years due to climate change and population growth.***

 Most water supply systems were built when water was thought to be unlimited. Agriculture currently uses 70% of the world’s freshwater supply for irrigation. Manufacturing a pair of denim jeans uses six tonnes of water. One kilogram of wheat requires one tonne of water, a kilogram of chicken requires three to four tonnes, and a kilogram of beef requires 15 to 30 tonnes.

 a. How might climate change affect the water supply in some parts of the world?

 b. Why is water demand expected to increase?

 c. What measures can water companies in the UK take to conserve water supplies?

 d. Some houses have water meters. Their water bill depends on how much water they use. Other houses just pay a fixed amount every year and the occupants can use unlimited water.

 (i) How do you think water meters help to conserve water?

 (ii) What evidence is needed to validate your answer to (i)?

 e. Some scientists have suggested designing roads and pavements to collect rainwater.

 (i) What currently happens to the rain that falls on roads and pavements?

 (ii) How would this water need to be treated to be potable?