Do you want salt on that?

Education in Chemistry
July 2019
rsc.li/2WblWt8

Table salt is an extremely common chemical compound that many of us add to our food. It can have benefits for the human body, but also comes with drawbacks. Read the article on the topic and answer the questions.

What is sodium chloride?

Your teacher can demonstrate the formation of sodium chloride from sodium and chlorine.

1) Describe the appearances of sodium and of chlorine.
2) Describe the appearance of sodium chloride.
3) Record what you observed while sodium chloride was being formed.
4) Write a word equation for the reaction.
5) If 1 g of sodium was used, would you expect the sodium chloride to weigh:
    i) 1 g
    ii) More than 1 g
    iii) Less than 1 g?

    Justify your answer.
6) *Challenge question: explain how a reactive grey metal and a poisonous green gas can be combined to form an edible white solid.*

Extracting sodium chloride

A student has a large lump of rock. Much of the rock is sodium chloride, but some of it is made up of other compounds. First, the student adds water to dissolve the sodium chloride.

7) In this case, what is the **solute**, **solvent** and **solution**?
8) In the rock there is also calcium carbonate. Calcium carbonate is insoluble. How can the calcium carbonate be separated once the salt has been dissolved?
9) Explain why your answer to 7 can separate the calcium carbonate from the solution, but cannot separate the sodium chloride from the water

Calculations with sodium chloride

10) Use the internet to research all the foods you ate yesterday and how much salt is in them. Add up the amount of salt you ate yesterday and compare it to the recommended maximum of 6 g a day. What can you do to eat less salt as part of your diet?