

Dissolving in Water

a) Where did it all go?

Focus

You know that seawater tastes salty. Perhaps you also know that water of the Dead Sea is saltier than water of the North Sea, and that the North Sea is saltier than the Baltic Sea. You can examine here if water can be infinitely salty.

Materials

- 1 teaspoon,
- one small beaker,
- salt,
- water

Procedure

- Add one teaspoon of salt to a glass that has been half-filled with water. Keep stirring until the salt has fully dissolved. You have now produced a saline solution.
- What has happened to the salt at first? Has it disappeared or was it still there? How do you know? How could you test this?
- Repeat step 1. That means add another teaspoon of salt and keep stirring until the salt has dissolved!
- Continue on in this way. How many times can you repeat this procedure? What finally happens to the water in the glass?

Results

- Describe your observations. Try to explain what happens when salt (or sugar) dissolves in water.
- Compare your observations and explanations with those of your classmates! Are there differences?

Conclusions

- Can seawater be infinitely salty? Give reasons!
- Explain some possible reasons why there are different types of salty water!

b) Brewing Tea

Focus

Have you ever watched what happens when tea is brewed? You will discover some interesting things.

Material

- 1 tea bag with coloured tea (black or herbal),
- 1 glass or glass teapot or
- 1 beaker (500 ml),
- hot water

Procedure

- Fill the teapot or beaker with hot water!
- Put the tea bag carefully into the water and observe what happens!
- Draw a diagram to show what you see immediately after dipping in the tea bag!

Results

- Explain your observations!
- Compare your observations and explanations with those of your classmates!

c) The water is cloudy!

Focus

Gases can dissolve in water. Many refreshing drinks, such as mineral water, contain the gas carbon dioxide. Bore water can produce cloudy water due to the pumping. What causes this effect in drinking water? You can examine here what happens to gases in water.

Materials

- 1 bottle of mineral water,
- 2 glasses

Procedure

- Fill two glasses with mineral water!
- Leave one glass stand!
- Heat the second one slowly, for example: set it on the heater or in the sun!
- Then let it cool down a bit!
- Taste the water in the two glasses and in the bottle.

Results

- Describe how each sample of water tasted and how they look!
- Q Would the result be the same as tap water pumped from a bore? Why or why not?

Conclusions

- Consider what has probably happened! Write down your explanations.
- Compare your explanations with those of your classmates.
- Consider why so many drinks contain the gas carbon dioxide.