1. Separating a sand and salt mixture

Topic
Separation techniques.

Timing
45 min.

Description
In this experiment students use simple processes to separate sand and salt.

Apparatus and equipment (per group)
- 250 cm$^3$ Beaker
- Filter funnel and paper
- Evaporating dish
- Tripod
- Bunsen burner
- Gauze
- Glass rod for stirring.

Chemicals (per group)
A mixture of salt and sand (about 20 per cent salt).

Teaching tips
It can be effective to show the separate sand and salt to the whole class. Mix them at the front of the class, then use this as an introduction to a class discussion about how to separate them.

Background theory
The principles of filtration, evaporation, and the dissolving process.

Safety
Wear eye protection.

Answers
1. To dissolve the salt in water.
2. The sand is filtered out into the filter paper; the filtrate is salt solution.
3. To remove the majority of the water.
Separating a sand and salt mixture

Introduction

In this experiment simple processes are used to separate salt from a sand and salt mixture.

What to do

1. Mix about 5 g of the mixture with 50 cm$^3$ of water in a 250 cm$^3$ beaker. Stir gently.
2. Filter the mixture into a conical flask and pour the filtrate into an evaporating basin.
3. Heat the salt solution gently until it starts to ‘spit’. Care: do not get too close.
4. Turn off the Bunsen burner and let the damp salt dry.

Safety

Wear eye protection.

Questions

1. Why is the salt, sand and water mixture stirred in step 1?
2. What happens when this mixture is filtered in the step 2?
3. Why is the salt heated in step 3?